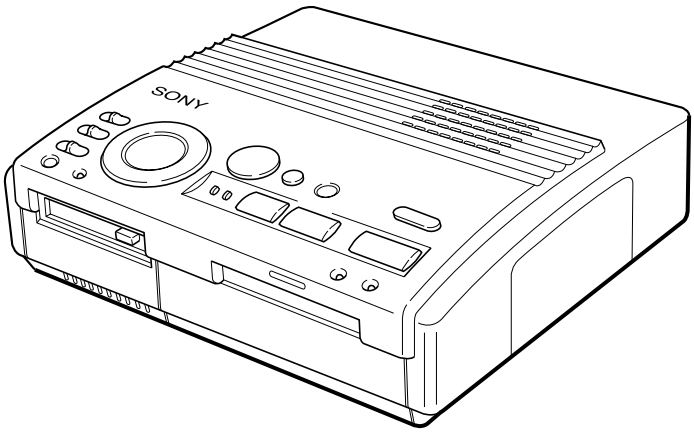
FVP-1E

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

Printing system	Sublimation dye transfer printing (Yellow/Magenta/Cyan 3 pass)
Effective pixels	1,376 (H) × 1,024 (V) dot
Printing size	114 (H) × 85 (V) mm (maximum) ($4^1/_2 \times 3^3/_8$ inches)
Gradations	256 levels (8 bits), per color (24 bits) Approx. 16,770,000 colors
Printing time (excluding data transmission time)	Approx. 100 seconds per sheet
Input/output connectors	VIDEO INPUT connector (phono jack × 1) 1 Vp-p, 75 ohms (unbalanced), sync nagative S VIDEO INPUT connector (4-pin mini-DIN × 1) Y: 1 Vp-p, 75 ohms (unbalanced), sync negative C: 0.286 Vp-p (color burst), 75-ohms (unbalanced) VIDEO OUTPUT connector (phono jack × 1) 1 Vp-p, 75 ohms (unbalanced), sync negative 3.5" Floppy disk drive
Print cartridge and Print paper (100 × 140 mm ($4 \times 5^5/_8$ inches))	VPM-P50STB (Standard papers) VPM-P200STB (Standard papers) VPM-P50WTB (Adhesive-label sheets for sticker) VPM-P50S04B (4-cut adhesive-label sheets for sticker) VPM-P50S16B (16-cut adhesive-label sheets for sticker)
Power requirements	220 – 240 V AC
Power consumption	72 W (printing) 13 W (stand by mode)
Operating temperature	5 °C to 35 °C (41 °F to 95 °F)
Operating humidity	20% to 80%
Dimensions	Approx. 301 × 83 × 246 mm (w/h/d, excluding protruding parts) ($12 \times 3^3/_8 \times 9^7/_8$ inches)
Mass	Approx. 3 kg (6 lb 10 oz)
Supplied accessories	AC power cord (1) Video connecting cable (1) CD-ROM (for Microsoft Windows® 95/98/NT4.0) (1) Instruction Manual (1) User's guide for the printer utility (1) Warranty (1)

Design and specifications are subject to change without notice.

DIGITAL COLOR PRINTER

SONY®

9-928-114-31

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Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacturer's instructions.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type
anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som
rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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- IBM PC/AT is a registered trademarks of IBM Corporation of the U.S.A.

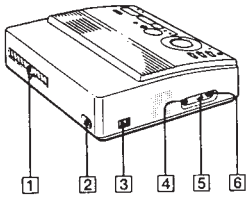
SAFETY-RELATED COMPONENT WARNING!!

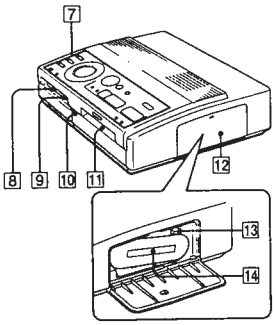
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

This section is extracted from instruction manual.

Identifying the parts

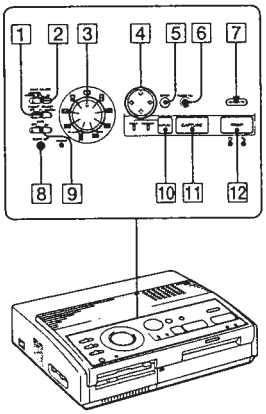
See the pages given in parentheses for use of the parts.





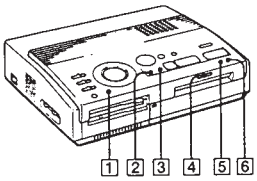
Cartridge compartment

1 Paper outlet (page 45)
2 AC power connector (page 10)
3 POWER switch (page 10)
4 VIDEO OUTPUT connector (page 8, 9)
5 VIDEO INPUT connector (page 9)
6 S VIDEO INPUT connector (page 9)
7 Operation panel (page 7)
8 3.5-inch floppy disk insertion slot (page 8)
9 3.5-inch floppy disk eject button (page 8)
10 Cover for the optional automatic feeder (page 17)
11 Paper inlet/outlet for manual feeding (page 16, 45)
12 Cartridge door (page 14, 15)
13 Eject lever (page 15)
14 Print cartridge (page 13, 14) (not supplied)



Operation Panel

1 PRESET SELECT switch (page 36)
2 INPUT SELECT switch (page 18, 24)
3 Print mode dial (page 19, 22, 26, 28, 30, 32)
4 Arrow buttons (↑/→/↓/←) (page 19)
5 ENTER button (page 19)
6 CLEAR ALL button (page 22)
7 SAVE button (page 37)
8 CLOCK SET button (page 11)
9 DATE switch (page 24)
10 PICTURE button (page 20, 22)
11 CAPTURE button (page 19, 22)
12 PRINT button (page 20, 23)



Indicators

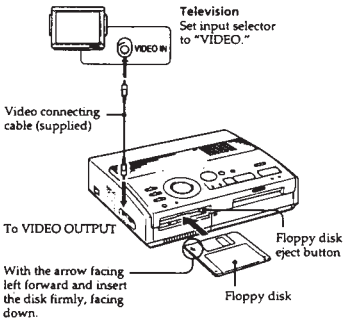
1 POWER indicator (page 11)
2 INPUT indicator (page 22, 43)
3 MEMORY indicator (page 22, 43)
4 Print indicator (page 20, 23, 43)
5 Paper supply indicator (page 43)
6 Ribbon error indicator (page 43)

Connecting the printer

Inserting the floppy disk

When printing images recorded on the floppy disk, insert the floppy disk into the insertion slot for the 3.5-inch floppy disk of the printer. Also connect the printer to the television to display the images to be printed.

For printing operations, see page 19.


Television
Set input selector to "VIDEO."
VIDEO IN
Video connecting cable (supplied)
To VIDEO OUTPUT
Floppy disk eject button
With the arrow facing left forward and insert the disk firmly, facing down.
Floppy disk

Ejecting the floppy disk

Press the floppy disk eject button.

Usable floppy disks and images you can print

You can use a 3.5-inch 2HD 1.44MB floppy disk in the MS-DOS format.

You can print images shot by the Digital Mavica (MVC-FD5, MVC-FD7, MVC-FD71, MVC-FD81) and saved in the floppy disk for printing with the supplied printer utility.

Notes

- Before making connections, turn off the power of both the printer and television.
- If the floppy disk does not fit properly, do not attempt to force it into the slot. Confirm the inserting direction again and re-insert it into the slot.

If the video equipment has the S-video output connector

Connect it to the S VIDEO INPUT connector of the printer using the optional S-video connecting cable so that you can get better picture quality. In this case, you do not need to connect the video connector.

When both the S VIDEO INPUT and VIDEO INPUT connectors of the printer are connected

The input signals from the S VIDEO INPUT connector are automatically selected.

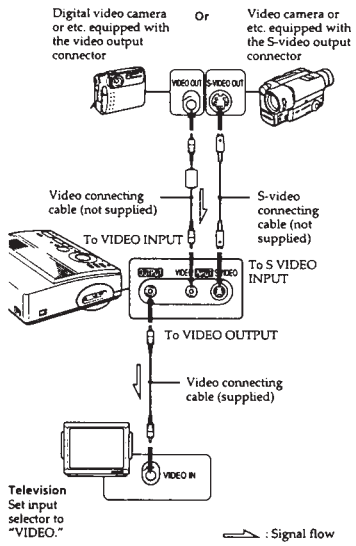
Notes

- Before making connections, turn off the power of the printer, the video equipment and television.
- See also to the instruction manuals for the video equipment.

Connecting to the video equipment

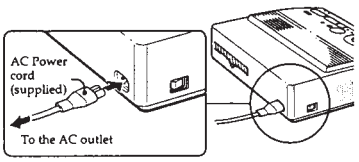
When printing images from the video equipment such as a VCR or camcorder, use the supplied video connecting cable to connect the video equipment and the printer. Also connect the printer to the television to display the images to be printed.

For printing operations, see page 22.


Digital video camera or etc. equipped with the video output connector
Or
Video camera or etc. equipped with the S-video output connector
VIDEO OUT
S-VIDEO OUT
Video connecting cable (not supplied)
S-video connecting cable (not supplied)
To VIDEO INPUT
To S VIDEO INPUT
To VIDEO OUTPUT
Video connecting cable (supplied)
VIDEO IN
Television
Set input selector to "VIDEO."
: Signal flow

Connecting the AC power cord

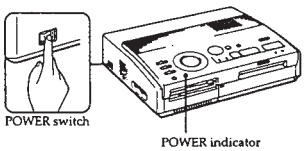
After you make connections, connect the supplied AC power cord to the AC power connector of the printer and then to the AC outlet.



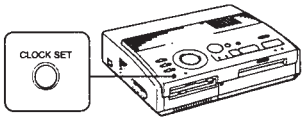
Adjusting the clock

You can save the time when the images are captured from the video equipment by adjusting the clock of the printer. Once you adjust the clock, the clock is maintained with the battery even if you turn off the power.

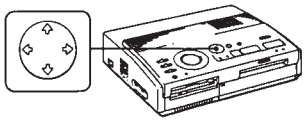
1 Turn on the power of the printer.
The POWER indicator lights up.



2 Press and hold CLOCK SET, then press ◆.
The clock setting display appears on the television.

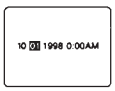


3 Press ♦/♦ to set the month (for the FVP-1) or date (for the FVP-1E).
Pressing ♦ increases the number.
Pressing ♦ decreases the number.

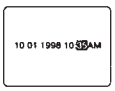


continued

4 Press ◆
The cursor moves to the next item.



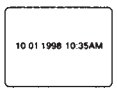
5 Repeat steps 3 and 4 to set all items: month, date, year, hour and minute (for the FVP-1) or date, month, year, hour and minute (for the FVP-1E).
If you want to set the previous item, press ◆.



6 Press CLOCK SET.
The clock setting display disappears.

Displaying the clock

When the INPUT indicator is on, press CLOCK SET to display the current time on the center of the screen. To turn off the time display, press CLOCK SET again.



Using optional supplies (print packs)

You need an optional print pack with VP mark. The pack contains print paper and ink ribbon cartridge for printing. See page 46 for details on the print papers.

The following types of print packs are available:

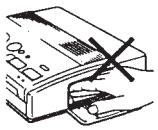
Print	Model	Print paper	Print cartridge
Standard	VPM-P50STB	Standard type	for 50 prints
	VPM-P200STB	Standard type	for 50 prints
Sticker	VPM-P50WSB	1-cut Sticker Adhesive-label sheet	for 50 prints
	VPM-P50S04B	4-cut Sticker Adhesive-label sheet	for 50 prints
	VPM-P50S16B	16-cut Sticker Adhesive-label sheet	for 50 prints

Note

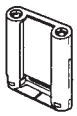
Use the set of the print paper and ink ribbon cartridge supplied together in the same carton. If you use them in different combination, proper printing results may not be obtained, or paper jam or other trouble may occur.

Loading the print cartridge

Caution
Never put your hand into the cartridge compartment. The thermal head reaches high temperatures, especially after repeated printing.



Notes
- If the print cartridge is not loaded when you turn on the printer, the warning sound beeps and the ribbon error indicator lights up.
- When installing the ink ribbon cartridge, stand it as illustrated so that dust will not get on the ink ribbon.

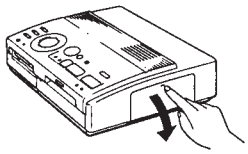


- Do not touch the ink ribbon or place the print cartridge in a dusty location. Fingerprints or dust on the ink ribbon may result in imperfect printing.

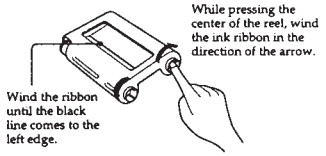
Insert the print cartridge into the printer.

Use only the print cartridge supplied with the print paper packed in the same carton.

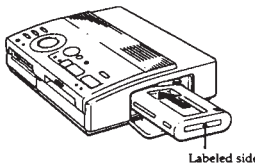
1 Press PUSH to open the cartridge compartment lid.



2 Wind up the ink ribbon to remove the slack.


While pressing the center of the reel, wind the ink ribbon in the direction of the arrow.
Wind the ribbon until the black line comes to the left edge.

3 Insert the print cartridge firmly until it clicks into place and close the cartridge compartment lid.

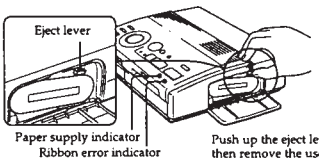


If the print cartridge does not click into place
Remove the print cartridge, and then re-insert it.

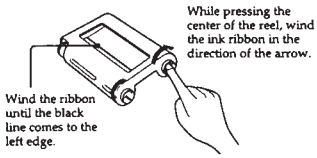
Notes on storing the print cartridge
- Avoid placing the cartridge in a location subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- When you are going to store a partially-used cartridge for an extended period of time, store it in its **original bag.**

To replace the print cartridge
If the ribbon indicator flashes and the inserted paper emerges after you insert the paper and the paper is automatically loaded, remove the print paper and replace the print cartridge.

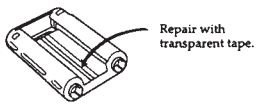
Open the cartridge compartment lid and push up the eject lever. Remove the used print cartridge and replace it with a new one.


Eject lever
Paper supply indicator
Ribbon error indicator
Push up the eject lever, then remove the used print cartridge.

To load the half-used ink ribbon cartridge


While pressing the center of the reel, wind the ink ribbon in the direction of the arrow.
Wind the ribbon until the black line comes to the left edge.

If ink ribbon should tear
Repair the ribbon with transparent tape. There should be no problem with using the remaining portion of the ribbon. Before loading the ink ribbon cartridge into the printer, turn the reel until the transparent tape can no longer be seen.



Inserting the print paper

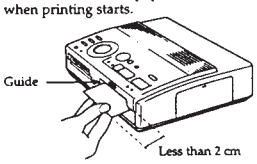
Notes
- Insert the print paper straight along the guide to the left of the paper port. If the paper is positioned to the right or slanted, the printing area may get out of position.
- The paper may not be loaded automatically if you do not insert the paper firmly.
- You cannot type on the printing surface before printing. If you want to write greetings or draw on the printing surface after printing, use an oil ink pen.
- When handling the print paper, do not touch the printing surface (shiny side where nothing is printed).
- Do not place the print paper in a dusty location. Fingerprints or dust on the printing surface may result in imperfect printing.
- Do not use the sticker papers which have been peeled off.
- Use the print paper recommended for this printer only.
- Do not fold or bend the print paper.

Insert the print paper sheet by sheet. This section explains how to insert the standard type print paper. **Use the print paper designated for this printer only.**

1 Turn on the power of the printer.
The POWER indicator lights up.

2 Follow printing procedures.
For details, see pages 19 to 35.

3 Insert the print paper straight with its blank printing surface facing up, **along the guide to the left of the paper port.**
Insert the paper until less than 2 cm (approx. 0.8 inches) remains. The paper is automatically loaded when printing starts.



Notes on storing the print paper
- Avoid placing the print paper in a location subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- When you are going to store the partially-used print paper for an extended period of time, store it in its original bag.

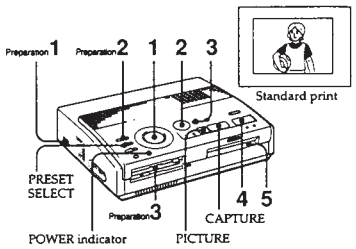
When you use the optional automatic feeder VPF-A1
You can automatically print images up to 25 sheets.

To attach the automatic feeder, press PUSH of the automatic feeder insertion port cover on the front panel of the printer.

When you close the cover, press PUSH until it locks.

Printing an image recorded on the floppy disk

You can select an image recorded on the floppy disk and print it in full-size (**standard print**).



Preparations

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

The POWER indicator lights up.

2 Set INPUT SELECT to "FD."

3 Insert the floppy disk on which you record images into the floppy disk insertion slot. (page 8)

While the printer is accessing the floppy disk, the access indicator flashes. When the printer ends reading images, recorded images are displayed as thumbnails.

Notes

- When the access indicator is lit, do not eject the floppy disk. Otherwise, the disk may crash.
- Make sure PRESET SELECT is set to "OFF."

Scrolling the pages

When multiple pages exist, you can change the pages back and forth. To display the next page (when } appears at the bottom-right), move the white frame to the bottom line of the image list and press ↓. To display to the previous page (when { appears at the top-right), move the white frame to the top line and press ↑. The access lamp flashes and pages switches.

Cancelling the selection

Move the white frame to the image you want to cancel the selection and press ENTER. The blue frame disappears and the selection is canceled.

Selecting multiple images

Repeat steps 2 and 3 until you select all images you want to print.

Displaying the image in full-size

Move the white frame to the desired image, then press CAPTURE in step 3. The selected full-size image appears in the center of the screen.

To display the next or previous full-size image, press ↓ (next image) or ↑ (previous image).

If you want to re-select the image, press PICTURE to return to the image list then repeat steps 2 and 3.

Note

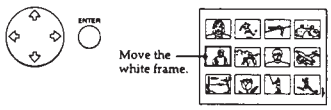
The displayed full-size image may not correspond with the actual print in details.

Printing

1 Set print mode dial to "▭ (standard)".

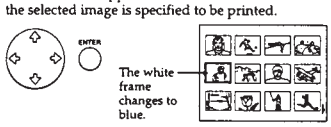
2 Press the arrow (←/→/↑/↓) buttons to move the white frame (cursor) to the image you want to print.

Move the white frame up (↑), down (↓), rightward (→), or leftward (←).



3 Press ENTER.

The blue frame appears inside the white frame and the selected image is specified to be printed.



continued

Printing an image recorded on the floppy disk (continued)

Notes

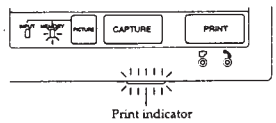
- An image which is damaged or has some trouble does not appear in the image list.
- If there are no images stored in the floppy disk, "NO FILE" appears on the display.
- If you press PRINT while displaying the actual print image, only the displayed image is printed.
- If you press PRINT while displaying the thumbnail list, all images with the blue frame are printed.
- While printing, never move or turn off the printer; the print cartridge or paper may become stuck. If this happens, turn the printer off and on, and resume printing from the beginning.
- Do not insert another sheet of print paper until you remove the printed sheet.
- During printing, the print paper is partially ejected from the paper outlet several times. Never pull out the paper forcibly.
- Avoid storing the paper with the printed faces contacting each other or contacting with rubber or plastic products including vinyl chloride or plasticizer for an extended period of time; the ink may transfer on to them.

If the print paper is not loaded

The print indicator and the paper supply indicator flash.
Insert the print paper.

4 Press PRINT.

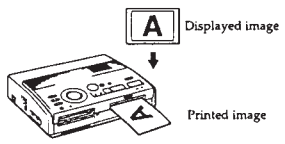
The print indicator flashes and the print paper is automatically loaded. The paper supply indicator flashes while loading the print paper.



Print indicator

Printing direction

The image displayed on the digital camera is printed in the direction as shown below.



5 Remove the print from the printer.

When printing ends, the print paper automatically emerges from the print outlet.

The print indicator turns out.

Printing the same image again

Press PRINT.

With the optional Automatic Feeder VPF-A1, you can print the same image continuously up to 25 sheets.

Printing other images

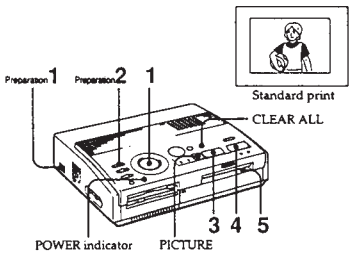
Press PICTURE so that the thumbnail screen appears, then perform steps 1 to 5.

Printing multiple images continuously

You can print multiple images continuously up to 25 sheets using the optional Automatic Feeder VPF-A1.

Printing an image from the video equipment

You can capture the input image from the video equipment connected to the VIDEO INPUT connector of the printer and print it in full-size (**standard print**).

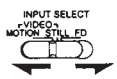


Preparations

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

The POWER indicator turns on.

2 Set INPUT SELECT to "VIDEO MOTION" or "VIDEO STILL."



To	Selector position
Print the motion picture while compensating for the image blur	VIDEO MOTION
Print the still image	VIDEO STILL

continued

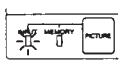
Printing

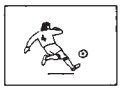
1 Set print mode dial to "□ (standard)".

2 Start playback on the video equipment.

While the INPUT indicator lights up, the playback picture appears on the screen (**input picture**).

For details on playing back on the video equipment, refer to the instruction manual of your equipment.

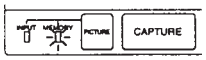




Input image

3 Press CAPTURE when the picture you want to print appears on the screen.

The selected full-size image appears in the center of the screen, and the MEMORY indicator lights up.



Print image

Blur compensation

When you set INPUT SELECT to "VIDEO MOTION," the selected image appears on the screen and the horizontal red line moves from the top to the bottom on the left half of screen, then moves from the top to the bottom on the right half of screen. In this sequence, if there is motion blur on the image, the printer automatically compensates for the image (blur compensation).

When the blur compensation ends, the screen darkens once and the print image appears in the screen.

Re-selecting the image

Press PICTURE. The playback picture appears on the screen.

If you press CLEAR ALL, the printer is reset to stand by mode.

Perform printing procedures from the beginning.

Notes

- While printing, never move or turn off the printer; the print cartridge or paper may become stuck. If this happens, turn the printer off and on, and resume printing from the beginning.
- Do not insert another sheet of print paper until you remove the printed sheet.
- During printing, the print paper is partially ejected from the paper outlet several times. Never pull out the paper forcibly.
- It is not recommended to select an image while pausing the video equipment because the picture quality will be lost.
- Avoid storing the paper with the printed faces contacting each other or contacting with rubber or plastic products including vinyl chloride or plasticizer for an extended period of time; the ink may transfer on to them.

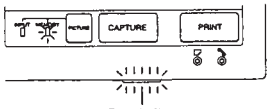
If the print paper is not loaded

The print indicator and the paper supply indicator flash.

Insert the print paper.

4 Press PRINT.

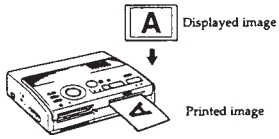
The print indicator flashes and the print paper is automatically loaded. The paper supply indicator flashes while loading the print paper.



Print indicator

Printing direction

The image displayed on the digital camera is printed in the direction as shown below.



5 Remove the print from the printer.

When printing ends, the print paper automatically emerges from the print outlet.

The print indicator turns out.

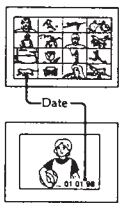
Printing the same image again

Make sure that the desired image is displayed on the screen, then press PRINT.

With the optional Automatic Feeder VPF-A1, you can print the same image continuously up to 25 sheets.

Printing the date

When printing the image in the floppy disk, you can print the date shot with the Digital Mavica.



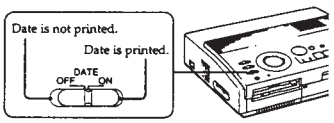
Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

2 Set INPUT SELECT to "FD."

3 Set PRESET SELECT to "OFF."

1 Set DATE to "ON."



2 Select the desired print using the print mode dial.

You can select standard printing (page 19, 22), split printing (page 26 to 29), index printing (page 30) or index printing (page 32).

Note

You cannot print the date in following cases.

- when you print the image from the video equipment
- when you print the image with your PC using the supplied Printer Utility

3 Select the image for printing.

① Insert the floppy disk into the floppy disk slot.

② Press the arrow buttons to move the white frame to the image you want to print, then press ENTER.

4 Press PRINT.

The selected image is printed with the date.

Making split prints

Printing images from the floppy disk

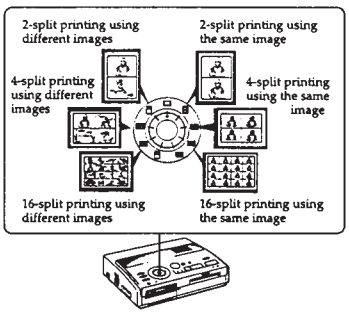
You can make prints divided into multiples of 1/2-, 1/4- or 1/16-size pictures. You can select the same image, or different images for the split print.

Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."
2 Set INPUT SELECT to "FD."
3 Set PRESET SELECT to "OFF."
4 Insert the floppy disk into the floppy disk slot.

1 Select the type of split using the print mode dial.

You can select 2-split, 4-split, 16-split planes of the same image or different images.


2-split printing using different images
2-split printing using the same image
4-split printing using different images
4-split printing using the same image
16-split printing using different images
16-split printing using the same image

2 Select the image.

- When selecting the same image for all the split planes:
  ① Press arrow button to move the white frame to the image you want to print, then press ENTER. (The blue frame appears inside the white frame.)

Printing the date
You can print the date when the image was saved by setting DATE to "ON."

Re-selecting the image
Move the white frame to the image you want to cancel the selection for and press ENTER. The blue frame disappears and the selection is canceled.
If you want to re-select the image after displaying the actual print image, press PICTURE to return to the thumbnail screen, then repeat step 2.

Re-selecting the type of the split
Press PICTURE so that the thumbnail screen appears. Re-select the split type using the print mode dial. You can use the selected images, or change the selection.

Canceling the operation
Press CLEAR ALL. The selected image is removed and the printer returns to stand by mode.
Perform printing procedures from the beginning.

Note
If you press PRINT when the actual print image is displayed, only the displayed image is printed.

② If you want to make other same image prints, repeat step ①.

- When selecting the different images for each split plane:
  ① Press the arrow button to move the white frame to the image you want to print, then press ENTER. (The blue frame appears inside the white frame.)
  ② Repeat step ① to select images for the split planes in the desired order.

The pictures are placed from the upper left to the lower right on the sheet in order of the selection, not in order of the image list.

You can also select an image from the different pages.

If you select more images than the number of the split planes, the images are automatically placed on the next print.

To check the actual print image

Press CAPTURE.

The actual print image with the white frame (for the same image split printing) or the blue frame (for the different images split printing) appears in the center of the screen.

To display multiple split prints, press ♦ or ♦.

When you select 4-split printing using a same image

When you select 4-split printing using different images

Making split prints (continued)

3 Press PRINT.

The print indicator flashes while printing, and the selected image is printed.

Printing images from the video equipment

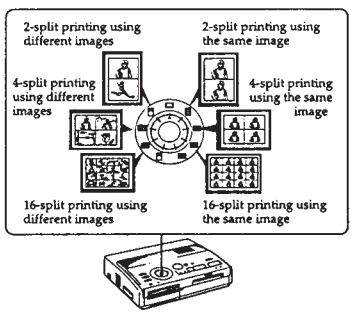
You can make prints divided into multiples of 1/2-, 1/4- or 1/16-size pictures. You can also select the same image, or different images for the split print.

Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."
2 Set INPUT SELECT to "VIDEO MOTION" or "VIDEO STILL."
3 Set PRESET SELECT to "OFF."

1 Select the type of split using the print mode dial.

You can select 2-split, 4-split, 16-split planes of the same image or different images.

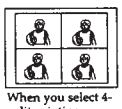

2-split printing using different images
2-split printing using the same image
4-split printing using different images
4-split printing using the same image
16-split printing using different images
16-split printing using the same image

When you select "VIDEO MOTION"
When you set INPUT SELECT to "VIDEO MOTION," the selected image is blur-compensated in step ②.

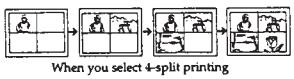
Re-selecting the image
Press CLEAR ALL. The selected image is removed and the printer returns to stand by mode.
Perform printing procedures from the beginning. You can also press CAPTURE again while the MEMORY indicator is flashing to reselect the image.
When you set to split printing with the same images, you can also press PICTURE to display the input picture, then re-select a new image.

2 Select the image.

- When selecting the same image for all the split planes:
  ① Turn on the video equipment and start playback.
  ② Press CAPTURE when the picture you want to print appears on the screen.
  The memory image is displayed in the split planes selected in the step 1.


When you select 4-split printing

- When selecting the different images for each split plane:
  ① Turn on the video equipment and start playback.
  ② Press CAPTURE when the picture you want to print appears on the screen.
  The memory image is displayed in the first plane of the split planes selected in the step 1.
  ③ Press PICTURE so that the input picture appears in the screen.
  ④ Repeat steps ② to ③ until you select images for all split planes.
  The selected pictures are allocated as follows:
  upper left → upper right → lower left → lower right.


When you select 4-split printing

3 Press PRINT.

The print indicator flashes while printing, and the selected image is printed.

Making a label for a floppy disk

You can make a label for a floppy disk by using the sticker-type print paper.

The selected image is printed as large picture on one label, and 3 thumbnail images with lines are printed on the other label. The total number of images is printed at the bottom left of the label.

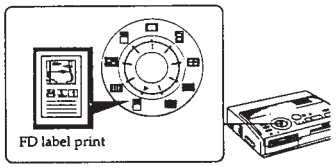
Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

2 Set INPUT SELECT to "FD."

3 Set PRESET SELECT to "OFF."

1 Select "(FD label print)" using the print mode dial.



2 Select the image for printing.

① Insert the floppy disk into the floppy disk slot.

② Press the arrow buttons to move the white frame to the image you want to print, then press ENTER.

The selected image is placed on the upper half of the print and the leftmost of the thumbnail on the lower half.

When printing the input image from the video equipment

You cannot make a label for a floppy disk.

Printing the date

You can print the date when the image was saved by setting DATE to "ON."

Cancelling the selection

Move the white frame to the image you want to cancel the selection and press ENTER. The blue frame disappears and the selection is canceled.

To remove the all selected images, press CLEAR ALL.

Perform printing procedures from the beginning.

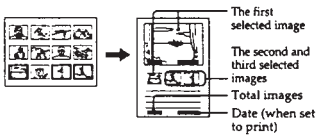
Note

You cannot type on the printing surface before printing. If you want to write greetings or draw on the printing surface after printing, use an oil ink pen.

③ Repeat step ② to select images for the other 2 thumbnails.

④ Press CAPTURE if you want to check the actual print image.

To display multiple print images, press ↑ or ↓.



3 Insert the sticker type paper into the printer, then press PRINT.

The print indicator flashes while printing, and the label for the floppy disk is printed.

You can use each part of the label for the floppy disk. Cut the paper so it fits the label side.

Making an index list of images

You can make an index list of images saved in a floppy disk. When you want to search for the recorded image, you can find the desired images immediately with this index list.

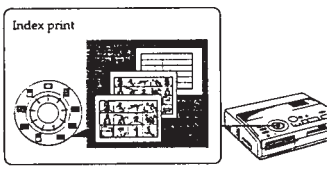
Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

2 Set INPUT SELECT to "FD."

3 Set PRESET SELECT to "OFF."

1 Select "(Index print)" using the print mode dial.



2 Insert the floppy disk into the floppy disk slot.

All the images recorded in the floppy disk are displayed in a thumbnail list.

If there are multiple pages, press ↑ or ↓ to display the next or previous page.

About date printing

The date when the image was saved is printed regardless of the DATE setting. However, the date does not appear on the displayed image.

Notes

- If the number of images is less than that of split planes, planes without images remain blank.
- If the number of image is over 43, the image number 43 or more is not printed.

To display the actual print image

Press CAPTURE.

All the images recorded in the floppy disk are displayed as the thumbnail images.

3 Press PRINT.

The print indicator flashes while printing, and the index list of the recorded images on the floppy disk is printed.

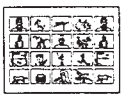
The size of each image depends on the number of the images.

- When the number of images is 1 to 12

The images are made into the size of 12 thumbnails. Each thumbnail has the corresponding image number.

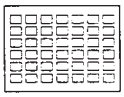
- When the number of images is 13 to 20

The images are made into the size of 20 thumbnails. Each thumbnail has the corresponding image number.



- When the number of images is over 21

The images are made into the size of 42 thumbnails. Each thumbnail has the corresponding image number.



Printing images specified with the Printer Utility

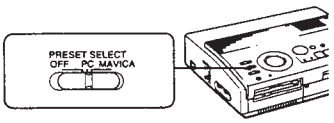
You can print images specified as protected images with the Digital Mavica or images specified with the Printer Utility all at once.

Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

2 Set INPUT SELECT to "FD."

1 Set PRESET SELECT to "MAVICA" or "PC."



To	Selector position
Print images protected by the Digital Mavica	MAVICA
Print images specified with the printer utility	PC

Notes

- If you set PRESET SELECT to "OFF," the images specified with the Digital Mavica or the printer utility do not appear as the selected image.
  In this case, perform the normal printing procedures.
- In this print mode, you can make only the standard print regardless of the position of the print mode dial.

Displaying the print image

Press CAPTURE. The first print image appears in the center of the screen.
To display the next or previous print image, press ♦ (next image) or ♦ (previous image).

Notes

- If you press PRINT while displaying the actual print image, only the displayed image is printed.
- If you press PRINT while displaying the thumbnail list, all images specified to be printed are printed.

2 Insert the floppy disk into the floppy disk slot.

- When printing images protected by the Digital Mavica

  The image protected by the Digital Mavica is displayed in the thumbnail list.

- When printing images specified by the printer utility

  The image specified by the printer utility is displayed in the thumbnail list.

3 Press PRINT.

The print indicator flashes while printing, and the protected images or specified images are printed in the order of the image number.

Recording the video picture as a still image

You can record the playback picture from the video equipment as a still image onto the floppy disk.

You can view the image with the Digital Mavica, process the image with the printer utility on your PC, or save the image as a general image file.

Before you begin

1 Turn on the printer and television and set the input selector of the television to "VIDEO."

2 Set INPUT SELECT to "VIDEO MOTION" or "VIDEO STILL."

1 Set print mode dial to "▭ (standard)."

2 Select the image to be recorded.

For details of operating procedures, refer to the pages for the corresponding printing mode.

① Turn on and start playback on the video equipment.

② Press CAPTURE when the picture you want to record appears on the screen.

3 Insert the floppy disk into the floppy disk slot.

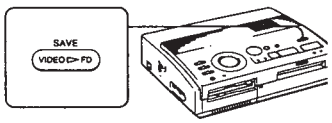
Insert a floppy disk formatted in the MS-DOS format. Check that the write protect switch on the disk is set to the write enable position.

Re-selecting the image

Press PICTURE. The playback picture appears on the screen. Follow step 2.
If you press CLEAR ALL, the printer is reset to stand by mode.
Perform printing procedures from the beginning.

4 Press SAVE.

The access indicator of the floppy disk drive lights up, and the displayed image is recorded onto the floppy disk.



About file name of the recorded image

The image is recorded with the file name "MVC-###s .jpg." The number "###" is sequentially allocated following the largest file number (same as the image number) recorded in the floppy disk.

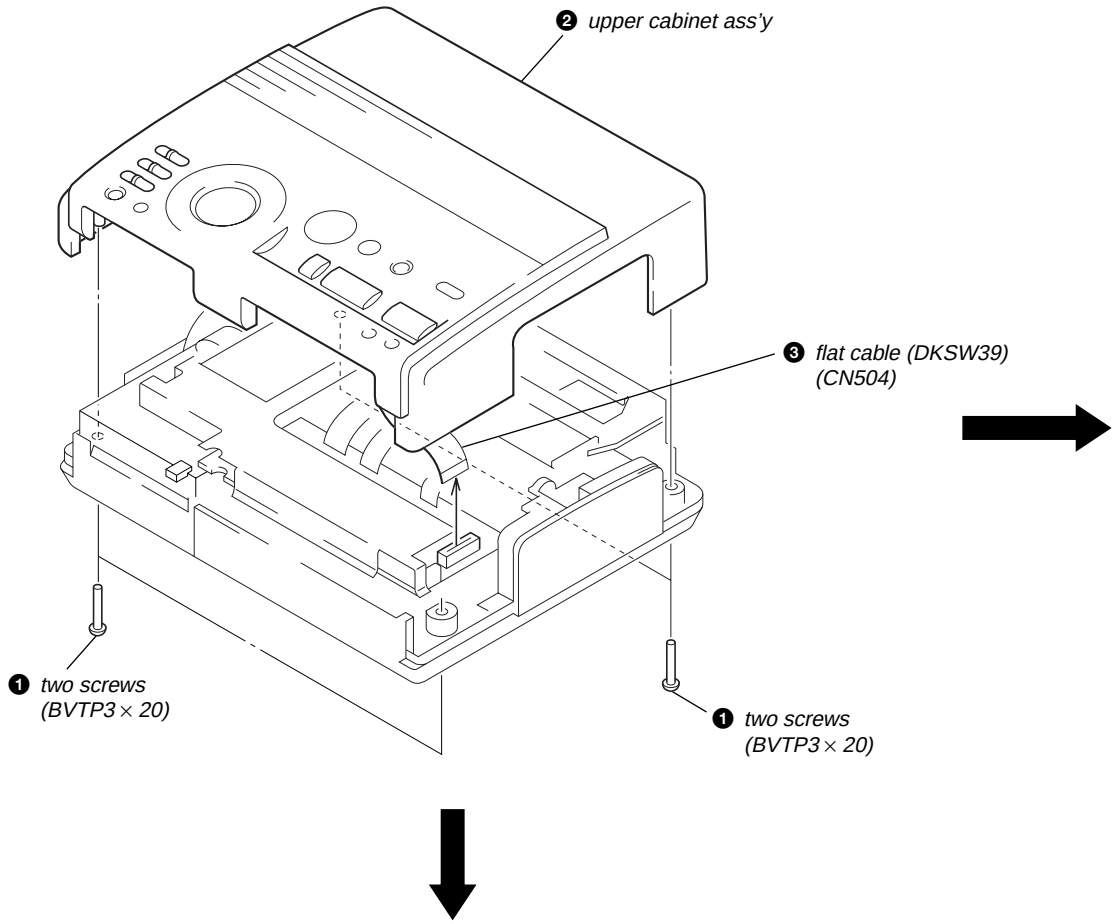
If an error message appears

Error message	Meaning
DISK ERROR	The inserted floppy disk is not formatted. Insert a disk in the MS-DOS format.
DISK FULL	There is not enough space to record the image. Replace the floppy disk with new one.
DISK PROTECT	The write protect tab on the inserted floppy disk is set to write protect position. Set it to the write enable position and then record the image.

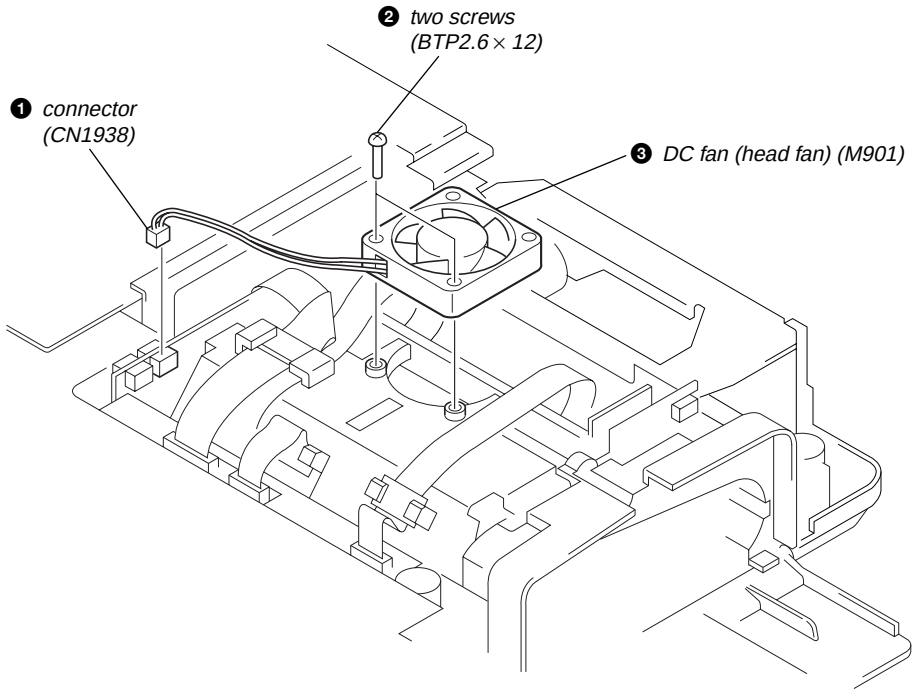
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

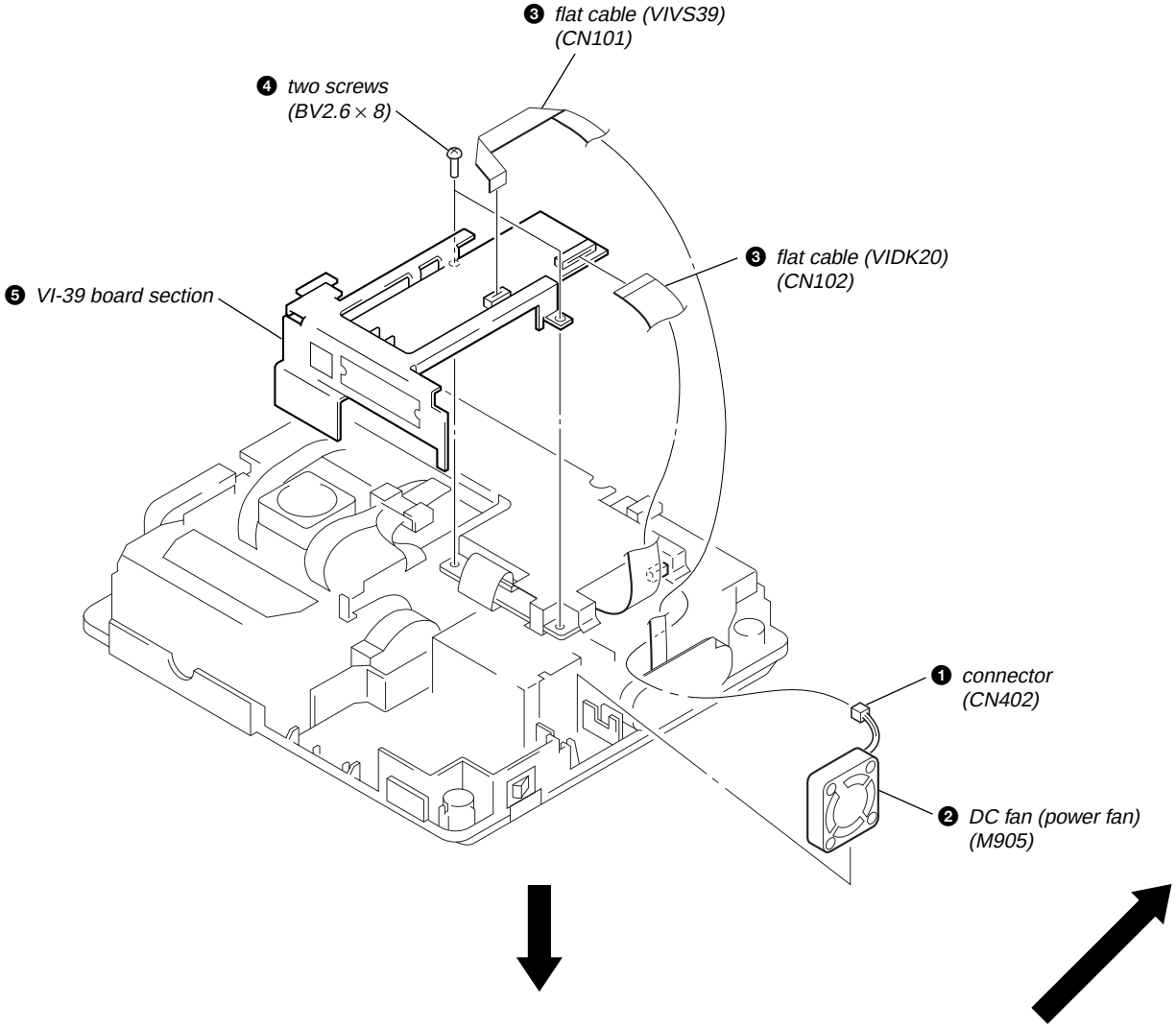
UPPER CABINET ASS'Y



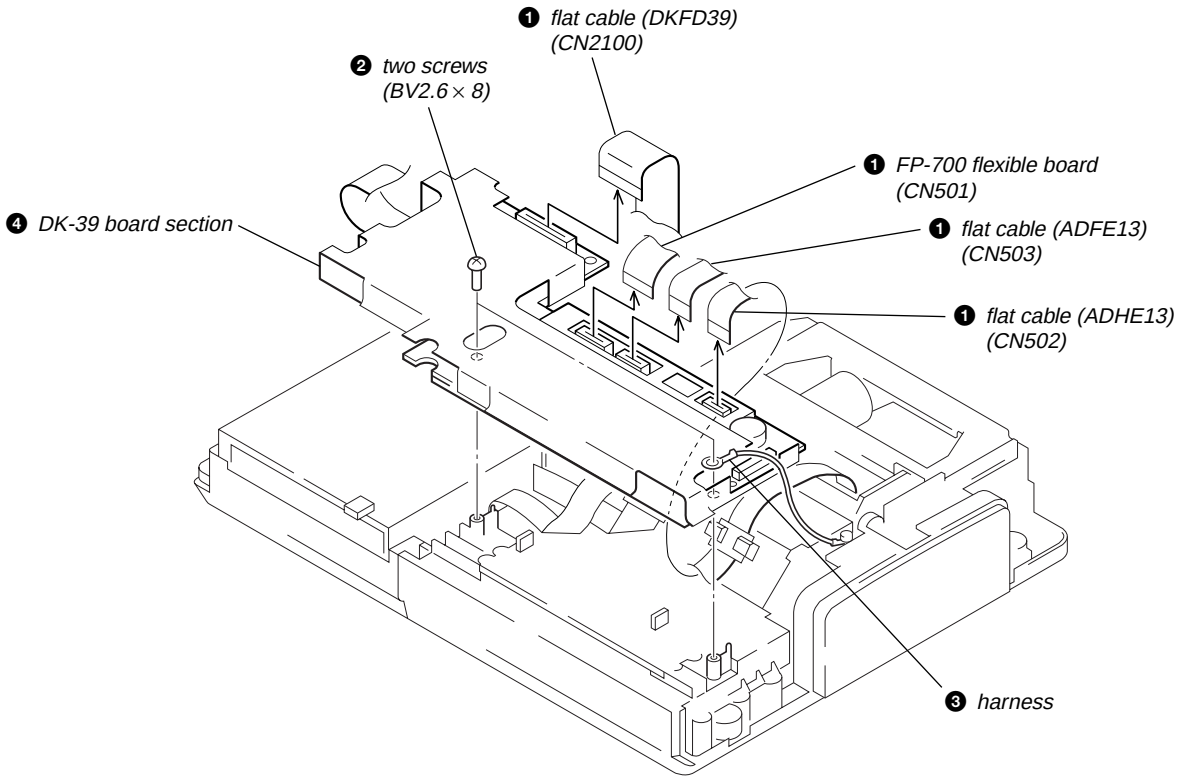
DC FAN (HEAD FAN) (M901)



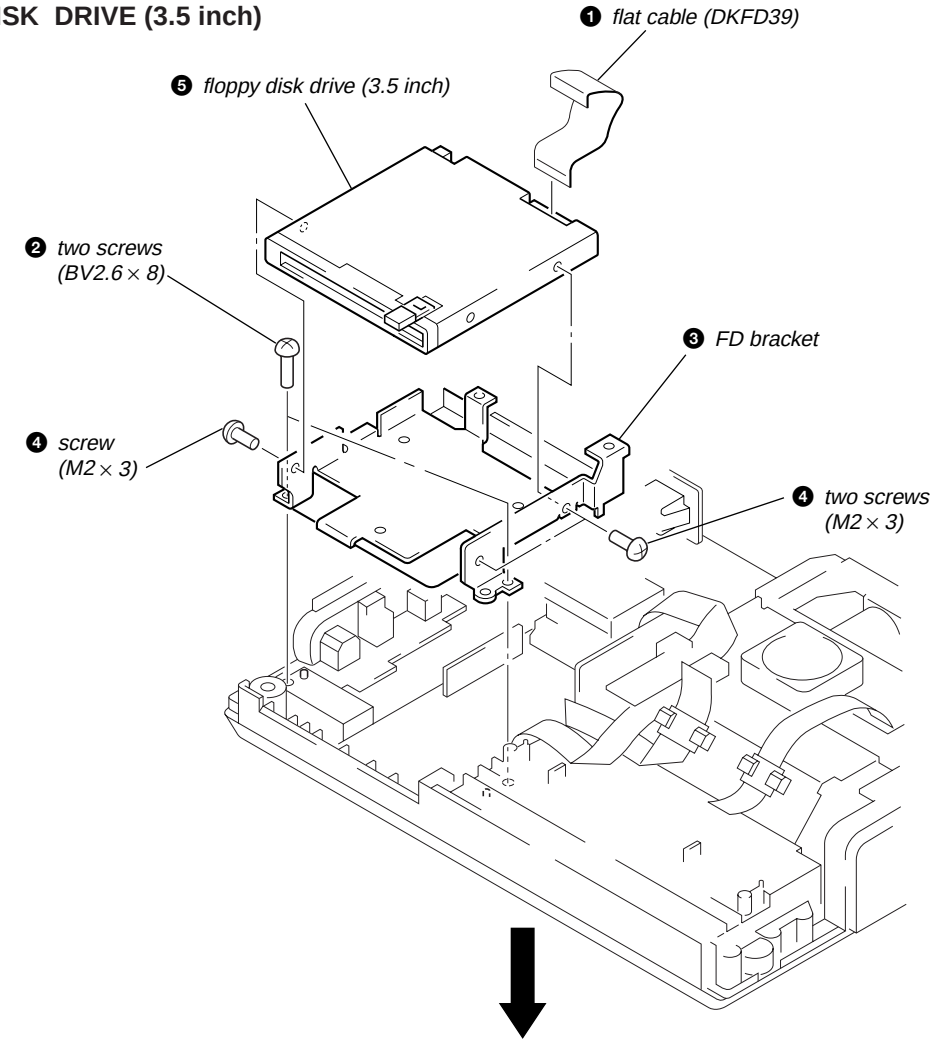
VI-39 BOARD SECTION, DC FAN (POWER FAN) (M905)



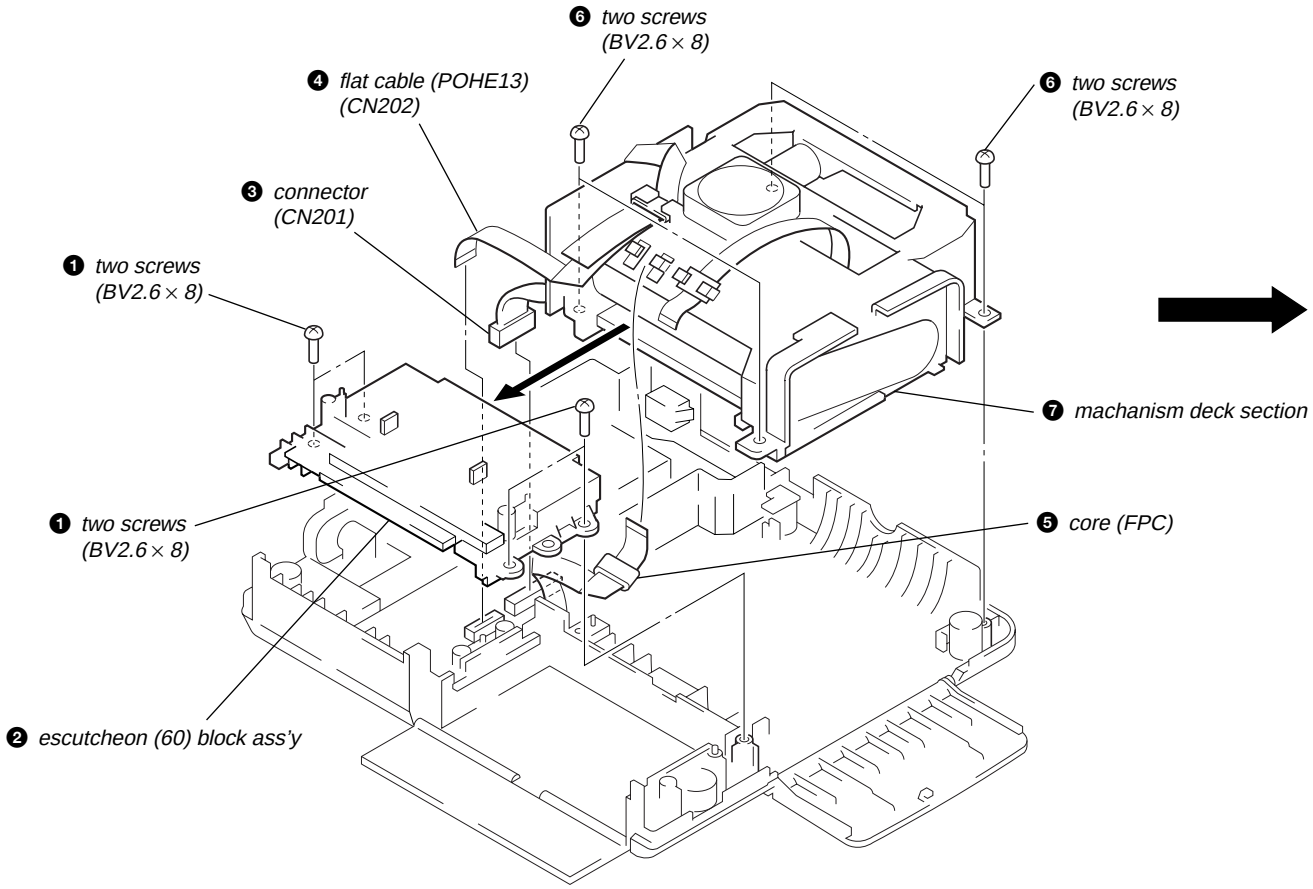
DK-39 BOARD SECTION



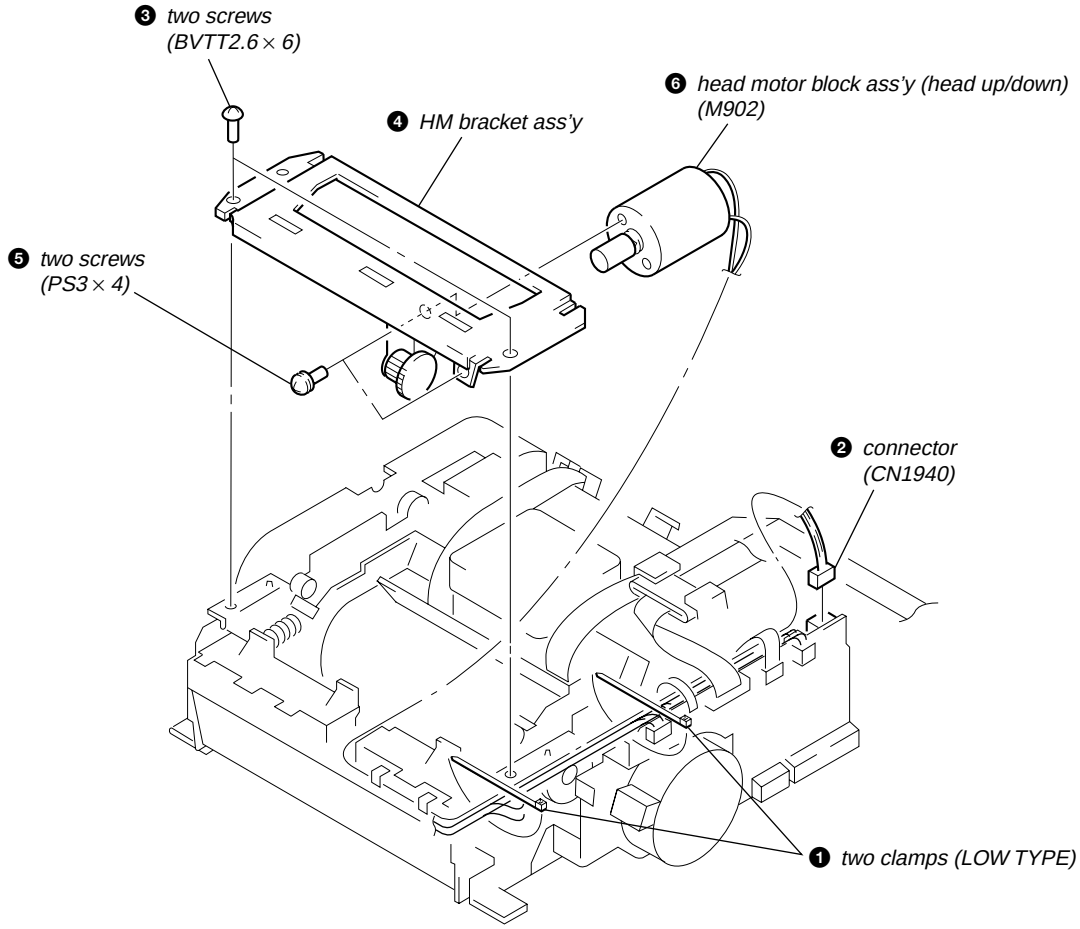
FLOPPY DISK DRIVE (3.5 inch)



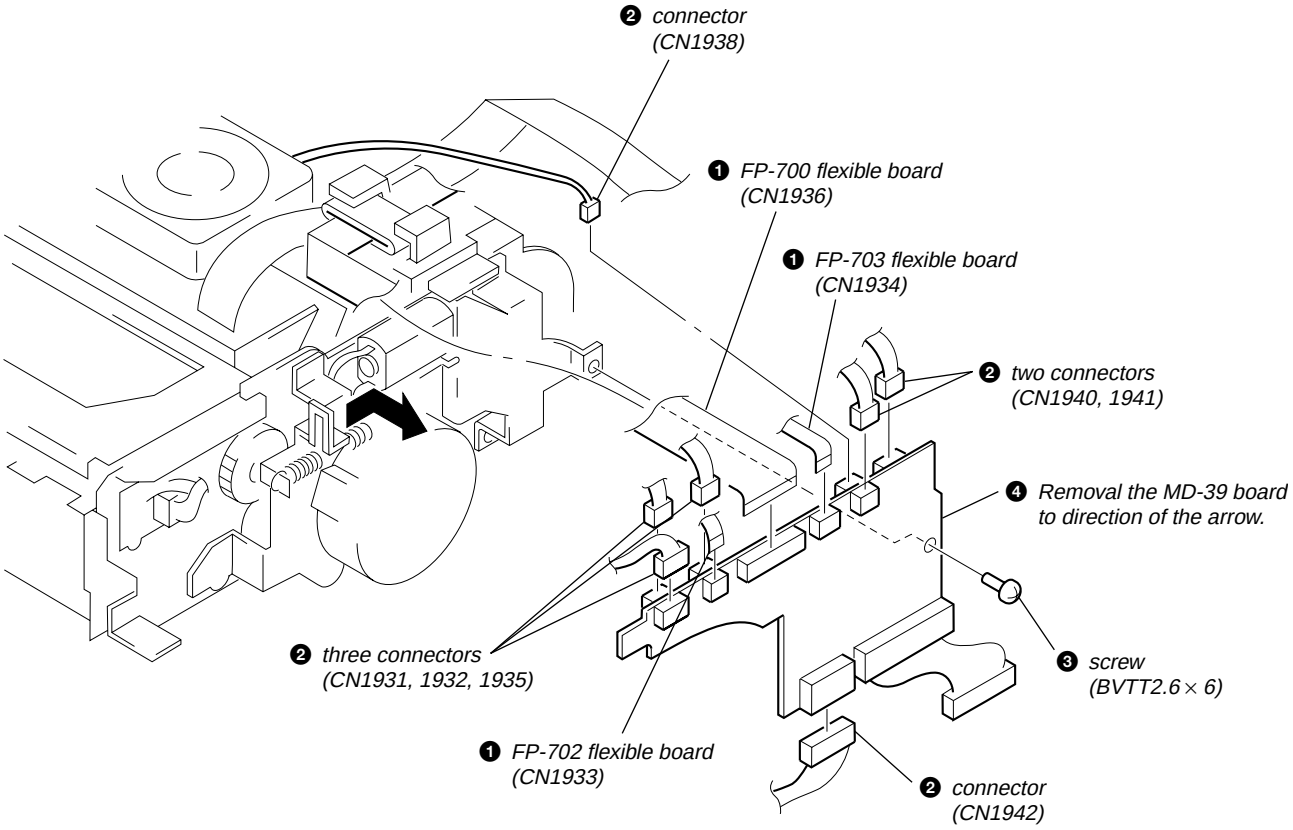
ESCUTCHEON (60) BLOCK ASS'Y, MECHANISM DECK SECTION


❻ two screws (BV2.6 × 8)
❹ flat cable (POHE13) (CN202)
❻ two screws (BV2.6 × 8)
❸ connector (CN201)
❶ two screws (BV2.6 × 8)
❼ machanism deck section
❶ two screws (BV2.6 × 8)
❺ core (FPC)
❷ escutcheon (60) block ass'y

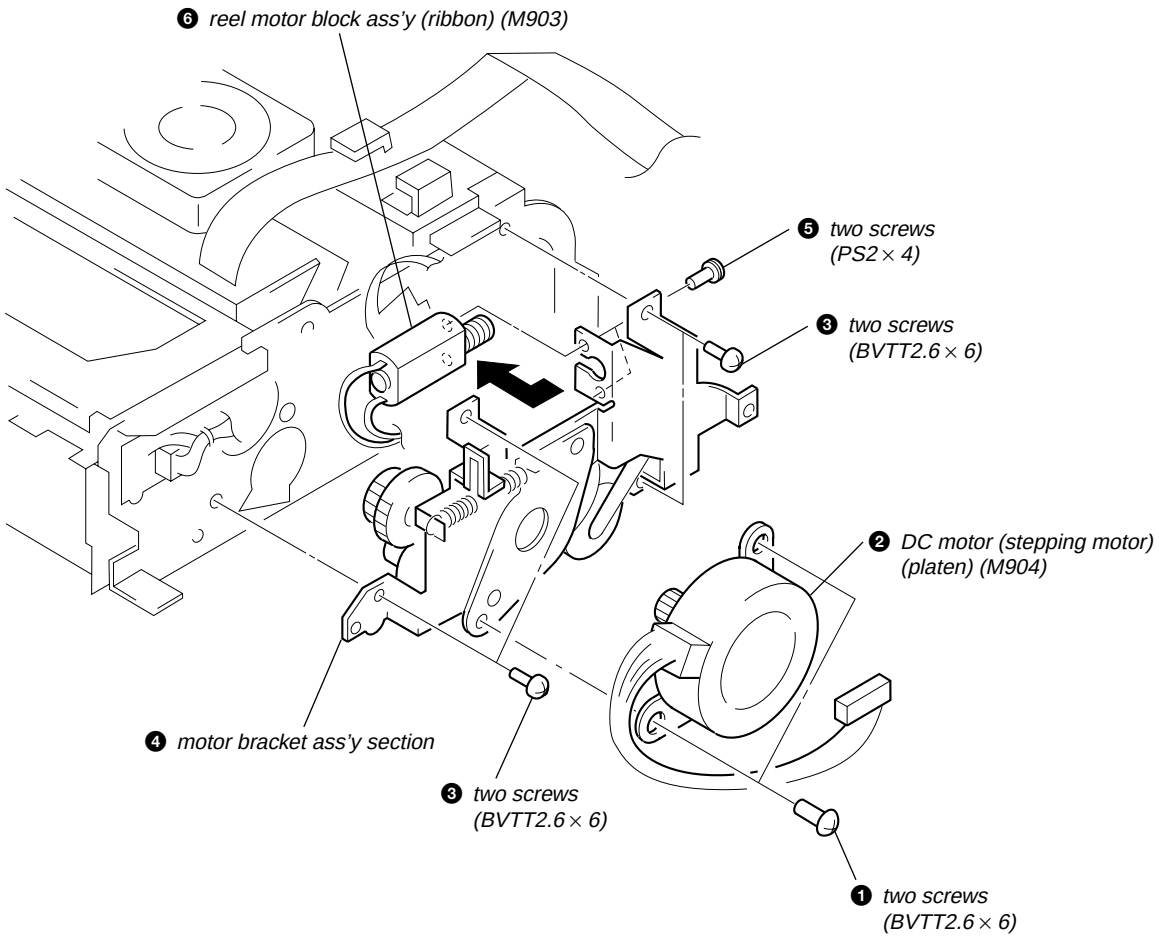
HEAD MOTOR BLOCK ASS'Y (HEAD UP/DOWN) (M902)



MD-39 BOARD



DC MOTOR (STEPPING MOTOR) (PLATEN) (M904), REEL MOTOR BLOCK ASS'Y (RIBBON) (M903)


❻ reel motor block ass'y (ribbon) (M903)
❺ two screws (PS2 × 4)
❸ two screws (BVTT2.6 × 6)
❷ DC motor (stepping motor) (platen) (M904)
❹ motor bracket ass'y section
❸ two screws (BVTT2.6 × 6)
❶ two screws (BVTT2.6 × 6)

SECTION 3
MECHANICAL ADJUSTMENTS

Replacing the Thermal Head

1) Before replacing the head, print the stair-step pattern with the old head (faulty head).
   Note 1: Only when the head is not entirely damaged with black or white lines.
   Note 2: To reproduce the stair-step pattern, refer to "Adjusting Method 1" in "4. Electrical Adjustments".
2) Remove the upper cabinet. (Refer to "2. Disassembly".)
3) Remove the flat cables ❶ (POHE13) and ❷ (ADHE13) from the thermal head. (Refer to Fig. 1)
4) Remove the two screws ❸ (BVTT2.6 × 6) and remove the harnesses ❹ and fan holder ❺. (Refer to Fig. 1)
5) Remove screw ❻, (PS2.6 × 4) and remove the ribbon guide ❼. (Refer to Fig. 2)
6) Remove the two screws ❽ (PSW2.6 × 8) and remove the thermal head ❾ from the heat sink ❿. (Refer to Fig. 2)
   Note: Do not remove the screw ⓬ fixing the heat sink ❿ and head arm ⓫.
7) Replace the thermal head ❾.
   Note: Make sure that the silicon grease (white) does not stick onto the printing screen of the thermal head. If it does, remove with alcohol.
8) Assemble in the reverse order of steps 2) to 6).
9) Perform "Head Voltage Adjustment" of "4. Electrical Adjustments" (Page 4-3).

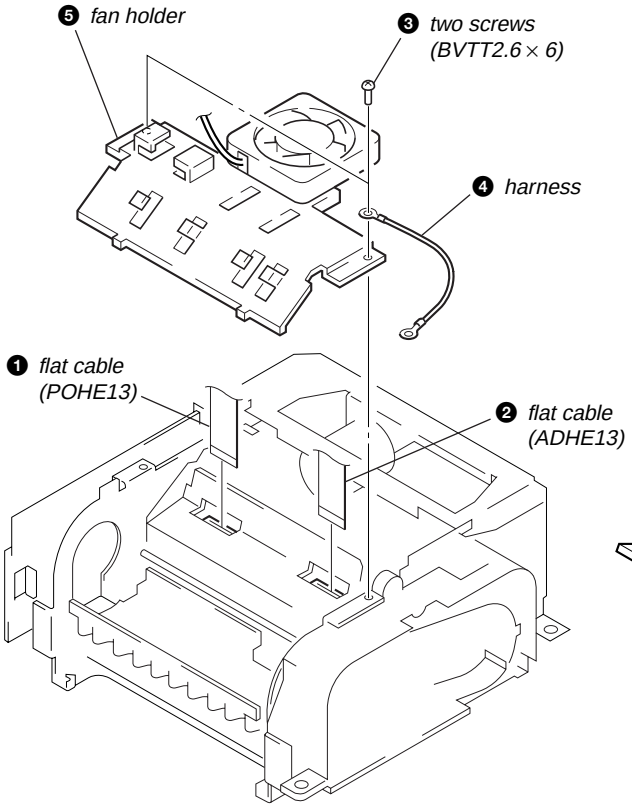


Fig. 1

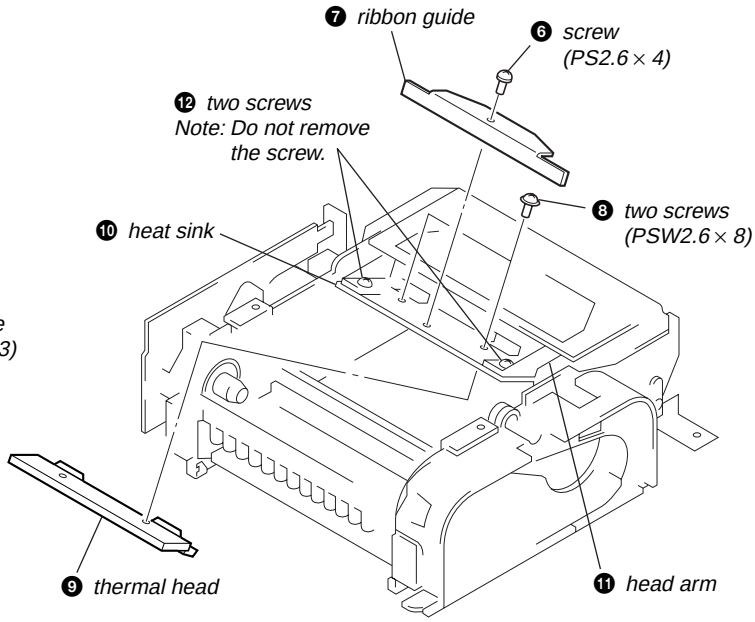

❼ ribbon guide
❻ screw (PS2.6 × 4)
⓬ two screws
Note: Do not remove the screw.
❽ two screws (PSW2.6 × 8)
❿ heat sink
❾ thermal head
⓫ head arm

Fig. 2

SECTION 4
ELECTRICAL ADJUSTMENTS

During the adjustment, see the Adjustment and Adjustment Pats on page 4-7.

Pre-Adjustment Preparations

1. Equipment required
   Electrical adjustment requires the following measuring equipment.

(1) Monitor TV
(2) Oscilloscope: 2 phenomena, bend 30 MHz or more, with delay mode (use 10 : 1 probe unless otherwise specified)
(3) Frequency counter
(4) Pattern generator
(5) Digital voltmeter
(6) Video print paper
(7) Video print cartridge
(8) Vector scope

2. Connection of Equipment

Following the designation of input terminal (S-VIDEO or VIDEO), connect measuring units as shown in Fig. 4-1 and make adjustment.

The input terminal is designated with ( ) in the signal column. Unless otherwise designated, either input terminal may be used.

Note: In the adjustment where the S-VIDEO input is designated, if adjustment was made with the VIDEO input. The specification of this set will not be satisfied. Always follow the designation.
If adjustment was made using the VTR with S-VIDEO OUT terminal as a signal source, the performance of this set depends on that VTR. Therefore, use the pattern generator with the Y/C separate output terminals, if possible.

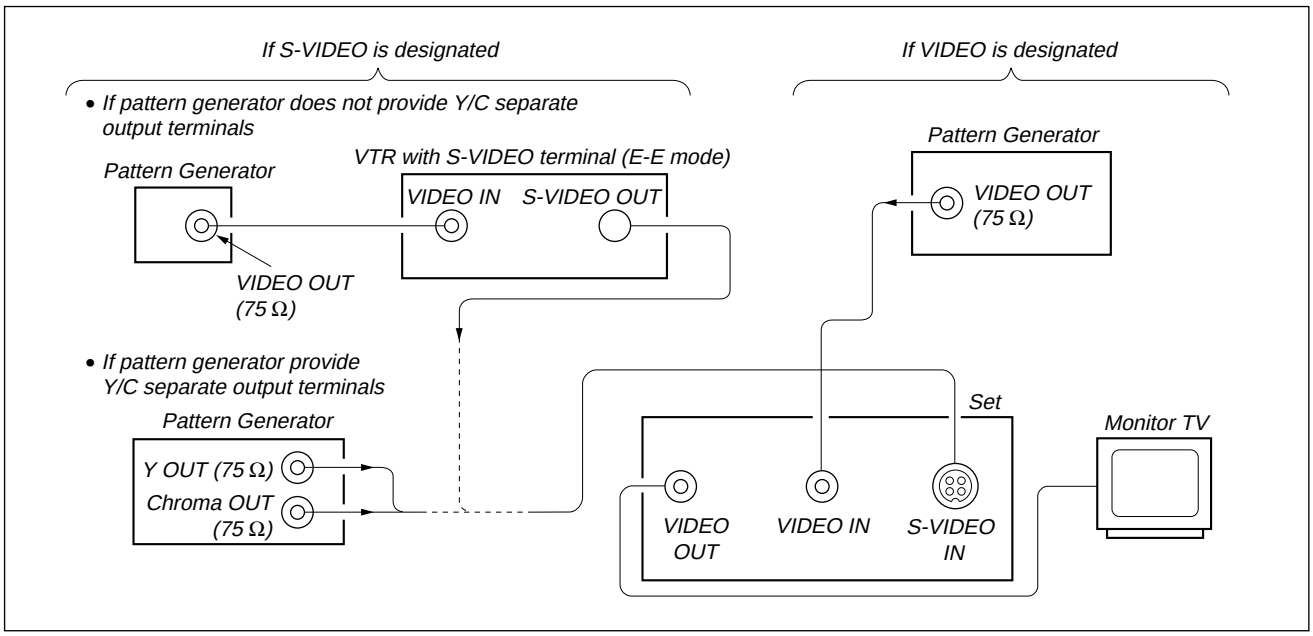


Fig. 4-1

3. Input Signal Check

The video circuit adjustment uses as adjustment signals the video signals obtained from the pattern generator, and therefore these video output signals must be within the specification.

(1) When S-VIDEO is input

Connect an oscilloscope to the Y signal pin of the S-VIDEO IN connector, and check that the sync signal of Y signal is 300 mV, video amplitude is 700 mV, and the setup level is 0 mV. (If using the VTR with S-VIDEO OUT terminal, check further that the chroma signal and burst signal do not remain.)

Also, connect an oscilloscope to the chroma signal pin of the S-VIDEO IN connector, and check that the burst signal amplitude of chroma signal is 300 mV and it is flat, and moreover, the amplitude ratio of burst signal to chroma signal is 0.30 : 0.66. The Y signal and chroma signal used for adjustment are shown in Fig. 4-2.

Setup level: Potential difference between black and pedestal

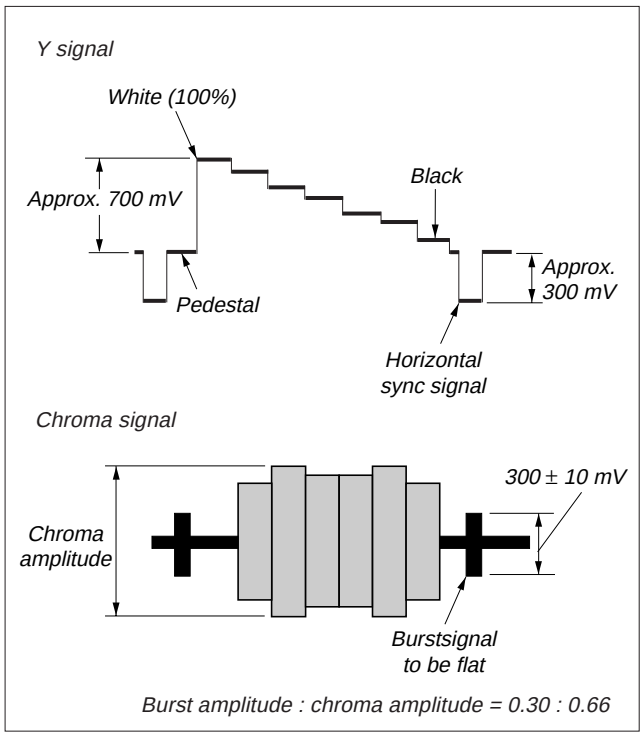


Fig. 4-2 Color bar signals of pattern generator (at terminating resistance 75 Ω)

(2) When VIDEO is input

Connect an oscilloscope to the VIDEO IN terminal, and check that the sync signal amplitude of VIDEO signal is 300 mV, video amplitude is 700 mV, the setup level is 0 mV, and the burst signal amplitude is 300 mV and it is flat. Also, check that the level ratio of burst signal to red signal is 0.3 : 0.66.

The VIDEO signal (color bars) used for adjustment is shown in Fig. 4-3.

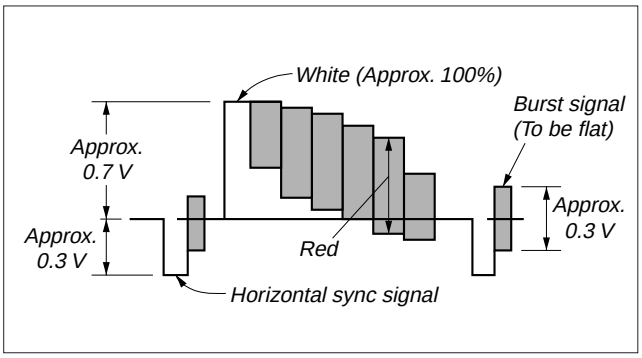


Fig. 4-3 Color bar signal of pattern generator (at terminating resistance 75 Ω)

POWER SUPPLY BLOCK

[Head Voltage Adjustment]

Before performing this adjustment, print the stair-step pattern (Note 2) two times continuously with the old head (Note 1) or normal unit. The second print will be used as a sample of the print density.

Note 1: Only when the old head (faulty head) is not entirely damaged with black or white lines.

Note 2: To print the stair-step test pattern, turn on the power switch while pressing the S1707 (CAPTURE) and S1717 (ENTER) on the SW-39 board.
(Press the S1707 (CAPTURE) and S1717 (ENTER) until a peep is heard.) Set the S1701 (Rotaly switch) to the ▣ position, and press the S1706 (print), then the print will start.

Mode	Test mode (Note 2)
Signal	Test pattern (Stair-step)
Measuring points	+: CN1943 ② pin (MD-39 board) –: CN1943 ③ pin
Measuring instrument	Digital Voltmerter
Adjustment part	VR201
Specification	Print density should be the same as the sample

Adjustment Procedure:

(1) To print the stair-step test pattern, turn on the power switch while pressing the S1707 (CAPTURE) and S1717 (ENTER) on the SW-39 board.
(Press the S1707 (CAPTURE) and S1717 (ENTER) until a peep is heard.) Set the S1701 (Rotaly switch) to the ▣ position, and press the S1706 (print), then the print will start.
(2) After printing, repeat (1) immediately.
(3) Compare the second printed pattern density with that of the sample, and if the density differs, perform the following adjustment.
(4) Adjust VR201 according to the print density.
If darker than the sample: Decrease the head voltage.
If lighter than the sample: Increase the head voltage.
(5) Print the stair-step pattern two times continuously.
(6) Compare the second printed pattern density with that of the simple, and if the density differs, repeat steps (3) to (6).

Note: Only one print is required after the second time.

(7) Turn off the power switch.

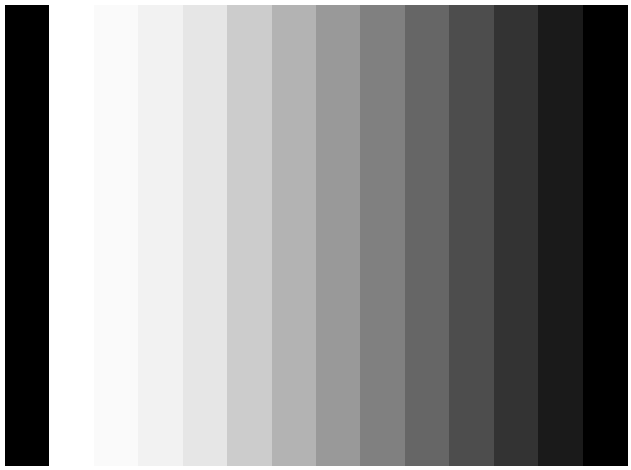
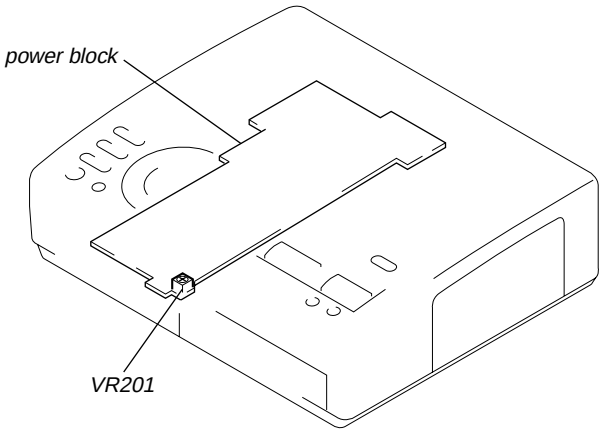


Fig. 4-4 Stair-step pattern

* VR201 is in the power block (1-468-364-11).

Adjustment Location:



VIDEO BLOCK

[Free-Run Frequency Adjustment (1)] (VI-39 board)

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN) (Note 1)
Measuring point	IC108 ⑱ pin
Measuring equipment	Frequency Counter
Adjustment part	CT102
Specification value	4.433619 MHz ± 30 Hz

Note 1: Connect IC108 ⑤ pin to the GND via 0.1µF capacitor (chroma signal grounded.)

Adjustment Procedure:
(1) Connect IC108 ⑦ pin to the GND via 1 MΩ resisitor.
(2) Adjust CT102 so that the frequency counter reading satisfies the specification value.

[Free-Run Frequency Adjustment (2)] (DK-39 board)

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN)
Measuring point	IC407 ⑬ pin
Measuring equipment	Frequency Counter
Adjustment part	CT500
Specification value	14.21875 MHz ± 100 Hz

Adjustment Procedure:
(1) Adjust CT500 so that the frequency counter reading satisfies the specification value.

[910fh Adjustment] (DK-39 board)

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN)
Measuring point	IC401 ⑪ pin (or CL427)
Measuring equipment	Digital Voltmeter
Adjustment part	CT401
Specification value	2.5 ± 0.1 Vdc

Adjustment Procedure:
(1) Adjust CT401 so that the digital voltmeter reading satisfies the specification value.

[Y/C Separation Y Level Adjustment] (VI-39 board)

Mode	VIDEO Input
Signal	Color bar (VIDEO IN)
Measuring point	CL138
Measuring equipment	Oscilloscope
Adjustment part	RV103
Specification value	700 ± 10 mVp-p

Adjustment Procedure:
(1) Adjust RV103 so that the Ⓐ level (white) of waveform on the oscilloscope satisfies the specification value.

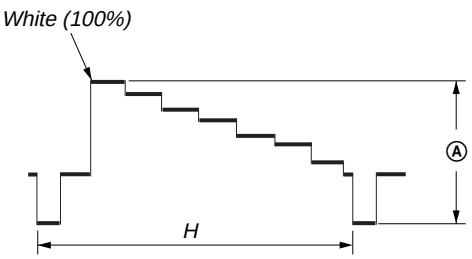


Fig. 4-5

[Y/C Separation CHROMA Level] (VI-39 board)

Mode	VIDEO Input
Signal	Color bar (VIDEO IN)
Measuring point	CL129
Measuring equipment	Oscilloscope
Adjustment part	RV102
Specification value	300 ± 5 mVp-p

Adjustment Procedure:
(1) Adjust RV102 so that the Ⓐ level (white) of waveform on the oscilloscope satisfies the specification value.

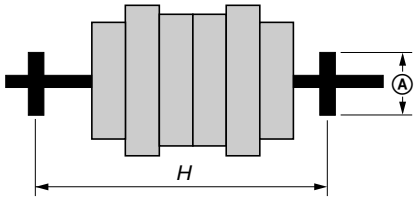


Fig. 4-6

[1H Delay Adjustment] (VI-39 board)

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN)
Measuring point	FL106 ③ pin
Measuring equipment	Oscilloscope
Adjustment part	RV105, 250, CT250

Adjustment Procedure:
(1) Set RV105 so that the luminescent spot of center.
(2) Set RV250 and CT250 so that the luminescent spots of phase and gain.

[D/A Output Y Level Adjustment] (DK-39 board)

Note: Turn of the power switch once, then turn it on again.

Mode	VIDEO Input
Signal	Color bar (VIDEO IN)
Measuring point	J1802 (OUTPUT)
Measuring equipment	Oscilloscope
Adjustment part	RV401
Specification value	700 ± 5 mVp-p

Adjustment Procedure:
(1) Adjust RV401 so that the Ⓐ level (white) of waveform on the oscilloscope satisfies the specification value.

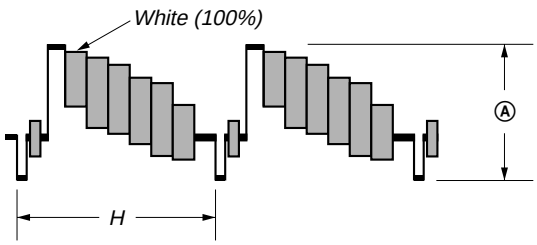


Fig. 4-7

[D/A Output CHROMA Level Adjustment] (DK-39 board)

Mode	VIDEO Input
Signal	Color bar (VIDEO IN)
Measuring point	J1802 (OUTPUT)
Measuring equipment	Oscilloscope
Adjustment part	RV402
Specification value	681 ± 5 mVp-p

Adjustment Procedure:

(1) Adjust RV402 so that the Ⓐ level (Red) of waveform on the oscilloscope satisfies the specification value.
(2) Turn off the power switch.

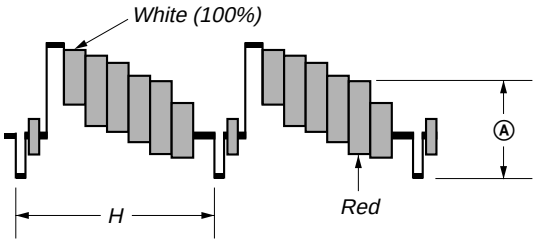


Fig. 4-8

[A/D Input Y Level Adjustment] (DK-39 board)

Note: Turn off the power switch once, then turn it on again.

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN)
Measuring point	CL409
Measuring equipment	Oscilloscope
Adjustment part	RV404
Specification value	1.30 ± 0.01 Vp-p

Adjustment Procedure:

(1) Connect on oscilloscope to the CL409 (from IC407 ㊹ pin to the point via R478).
(2) Adjust RV404 so that the Ⓐ level (white) of waveform on the oscilloscope satisfies the specification value.

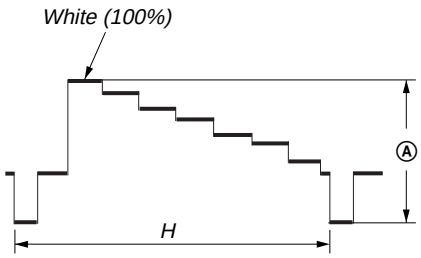


Fig. 4-9

[A/D Input R-Y/B-Y Level Adjustment] (VI-39, DK-39 board)

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN)
Measuring point	CL407, 408
Measuring equipment	Oscilloscope
Adjustment parts	RV106, 405
Specification value	CL407 (R-Y) 1.05 ± 0.01 Vp-p CL408 (B-Y) 1.20 ± 0.01 Vp-p

Adjustment Procedure:

(1) Connect on oscilloscope to the CL408.
(2) Adjust RV106 so that the Ⓐ level (B-Y) of waveform on the oscilloscope satisfies the specification value.

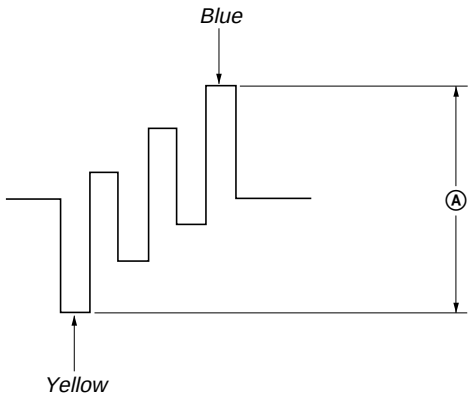


Fig. 4-10

(3) Connect on oscilloscope to the CL407.
(4) Adjust RV405 so that the Ⓐ level (R-Y) of waveform on the oscilloscope satisfies the specification value.

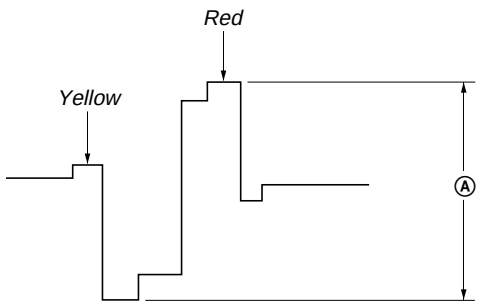


Fig. 4-11

[HUE Level Adjustment] (VI-39 board)

Mode	VIDEO Input
Signal	Color bar (S-VIDEO IN)
Measuring point	J1802 (OUTPUT)
Measuring equipment	Vector scope
Adjustment part	RV105
Specification value	Yellow phase 167 ± 4 deg

Adjustment Procedure:

(1) Connect on vector scope to the J1802.
(2) Press the S1707 (CAPTURE).
(3) Check yellow phase satisfies the specification value.
(4) If NG, press the S1708 (PICTURE) and lights on the D1733 (INPUT)
(5) A little adjust the RV105 and press the S1707.
(6) Repeat steps (2) to (5) until yellow phase satisfies the specification value.

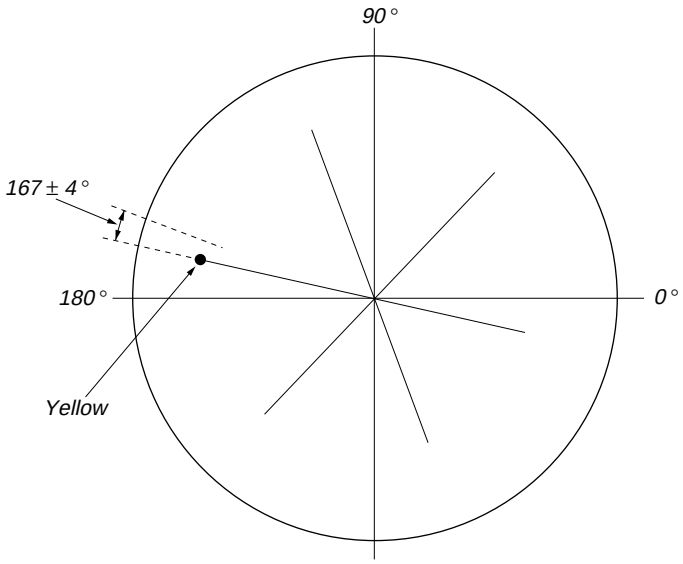
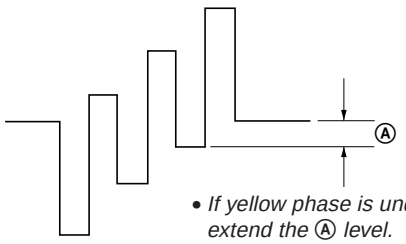


Fig. 4-12

Reference : B-Y Waveform (CL408)

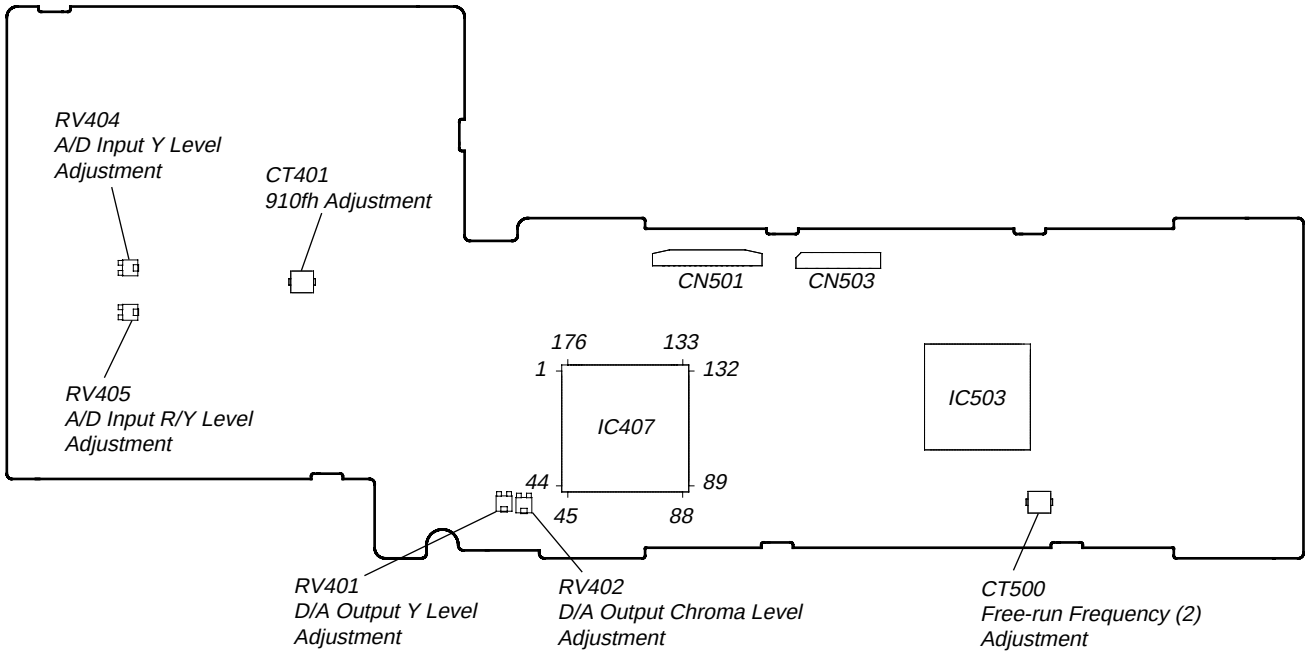


- *If yellow phase is under 163 °, extend the Ⓐ level.*
- *If yellow phase is over 171°, shorten the Ⓐ level.*

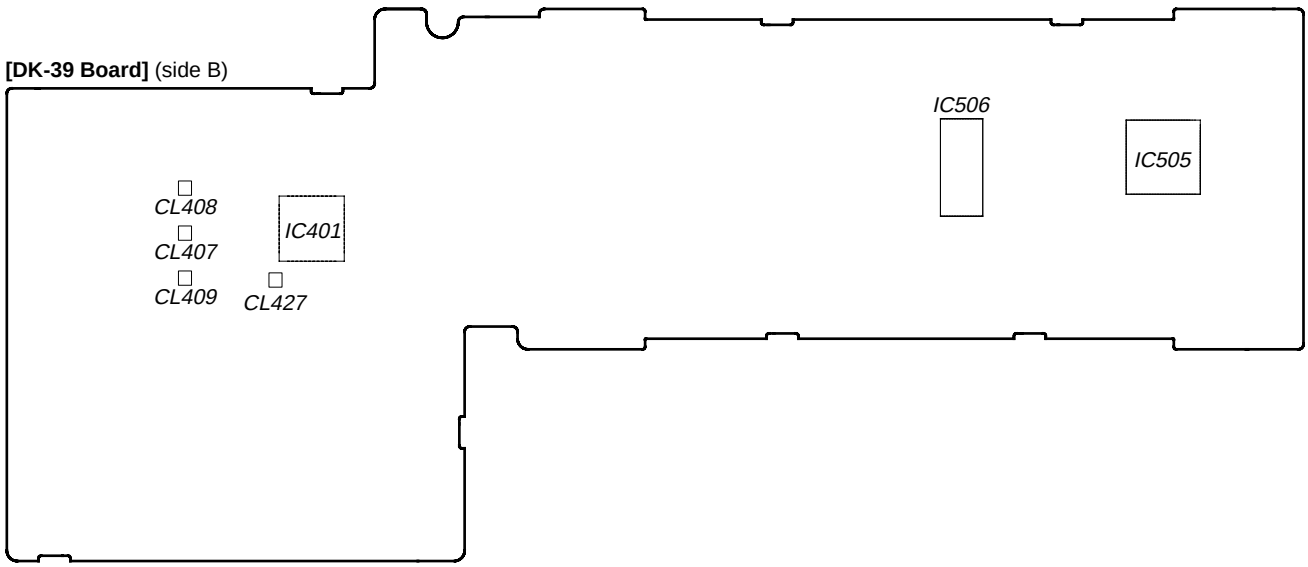
Fig. 4-13

Adjustment Parts and Measuring Points:

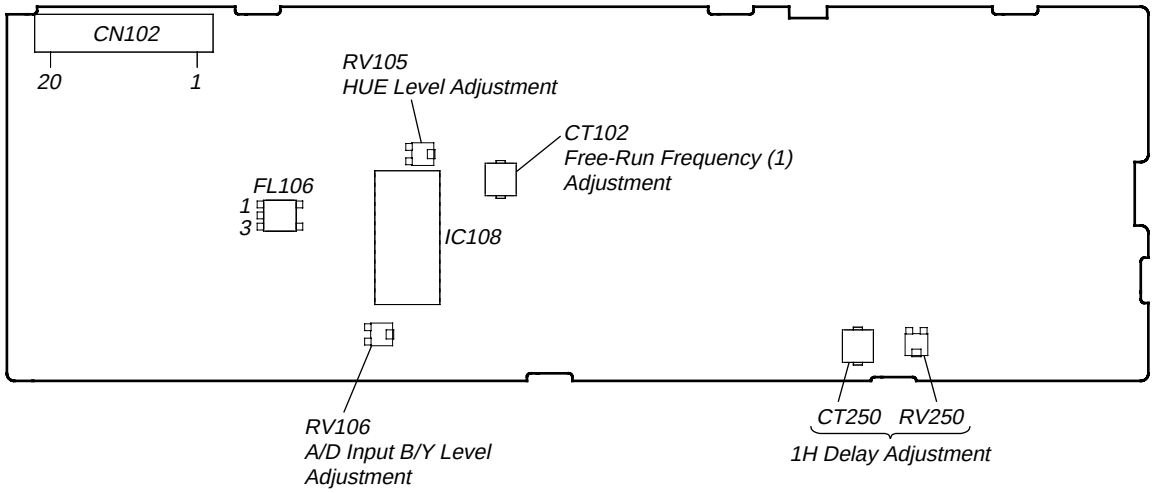
[DK-39 Board] (side A)



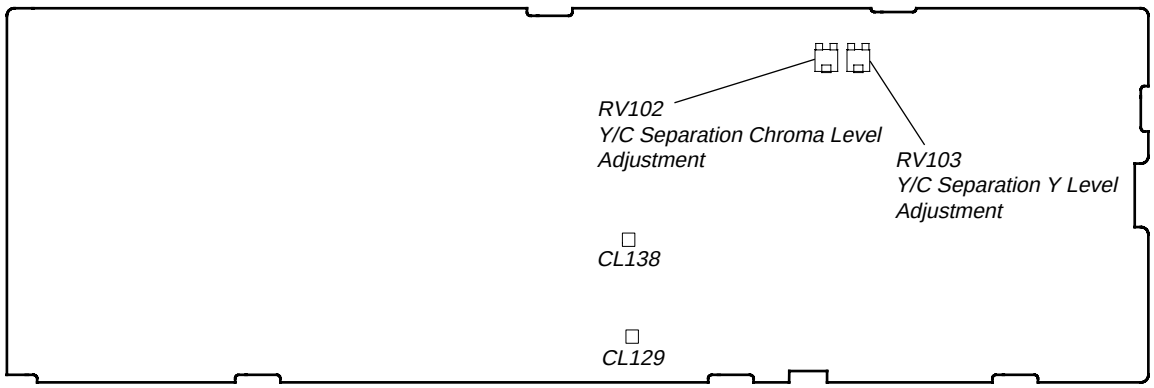
[DK-39 Board] (side B)



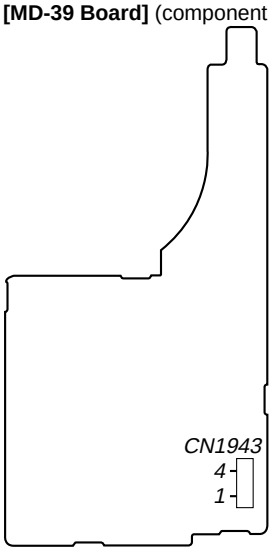
[VI-39 Board] (side A)



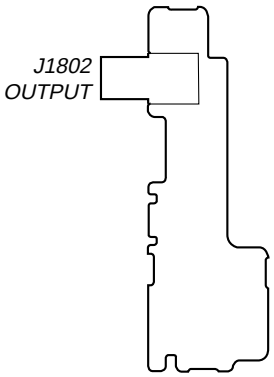
[VI-39 Board] (side B)



[MD-39 Board] (component side)

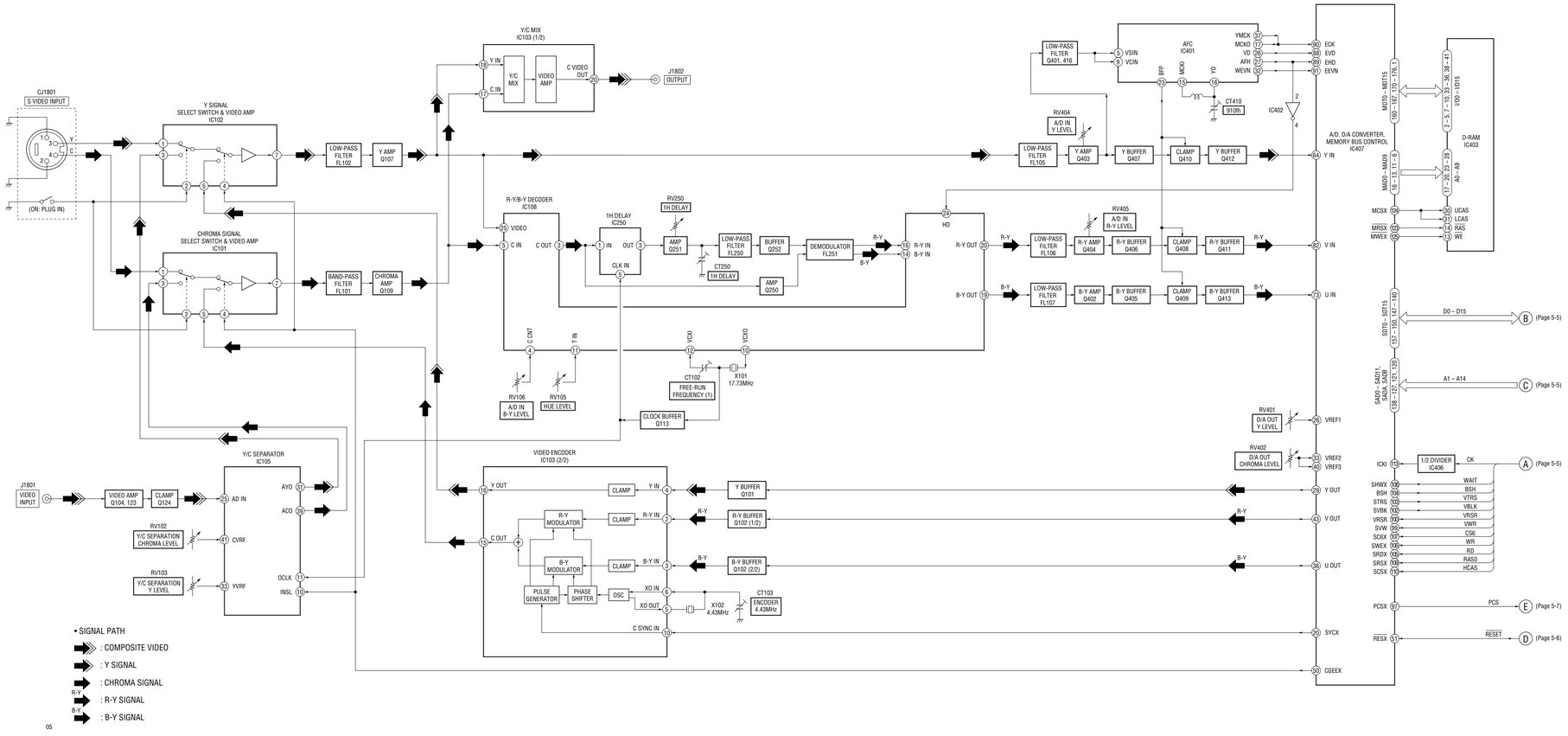


[VS-39 Board] (component side)

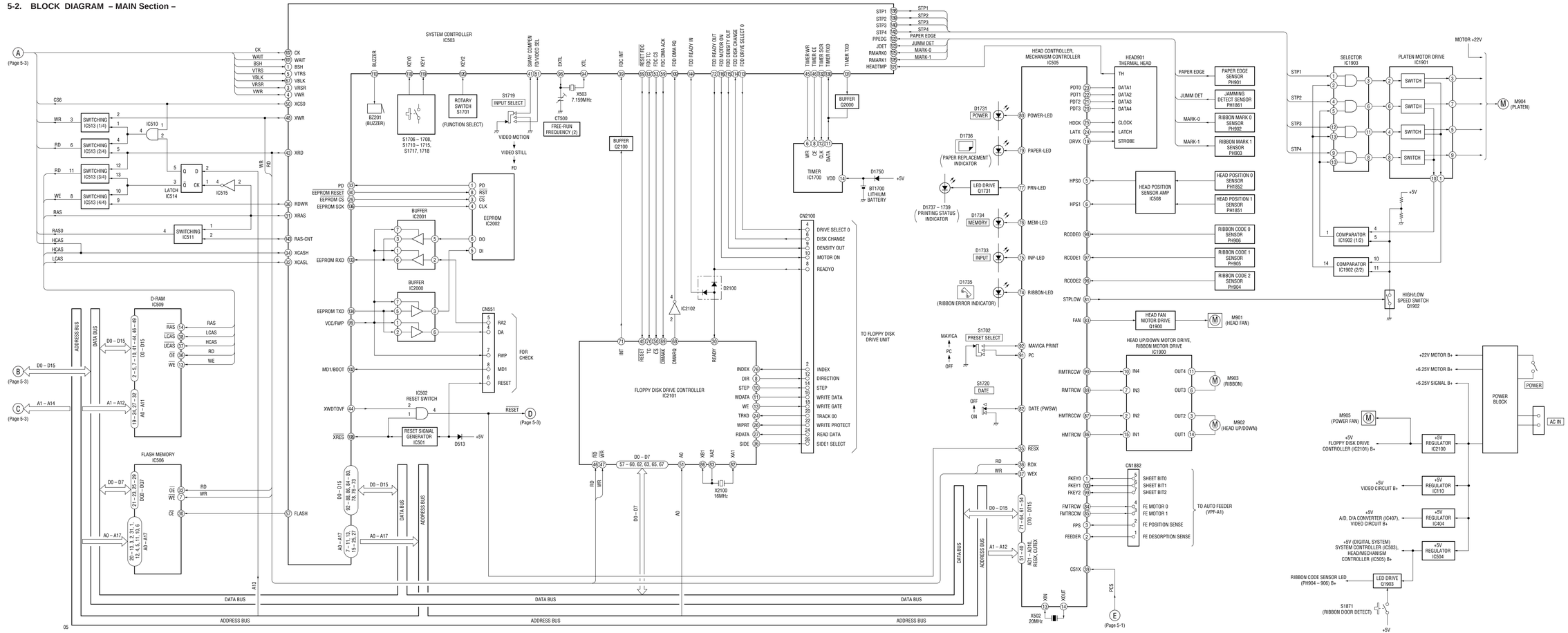


SECTION 5
DIAGRAMS

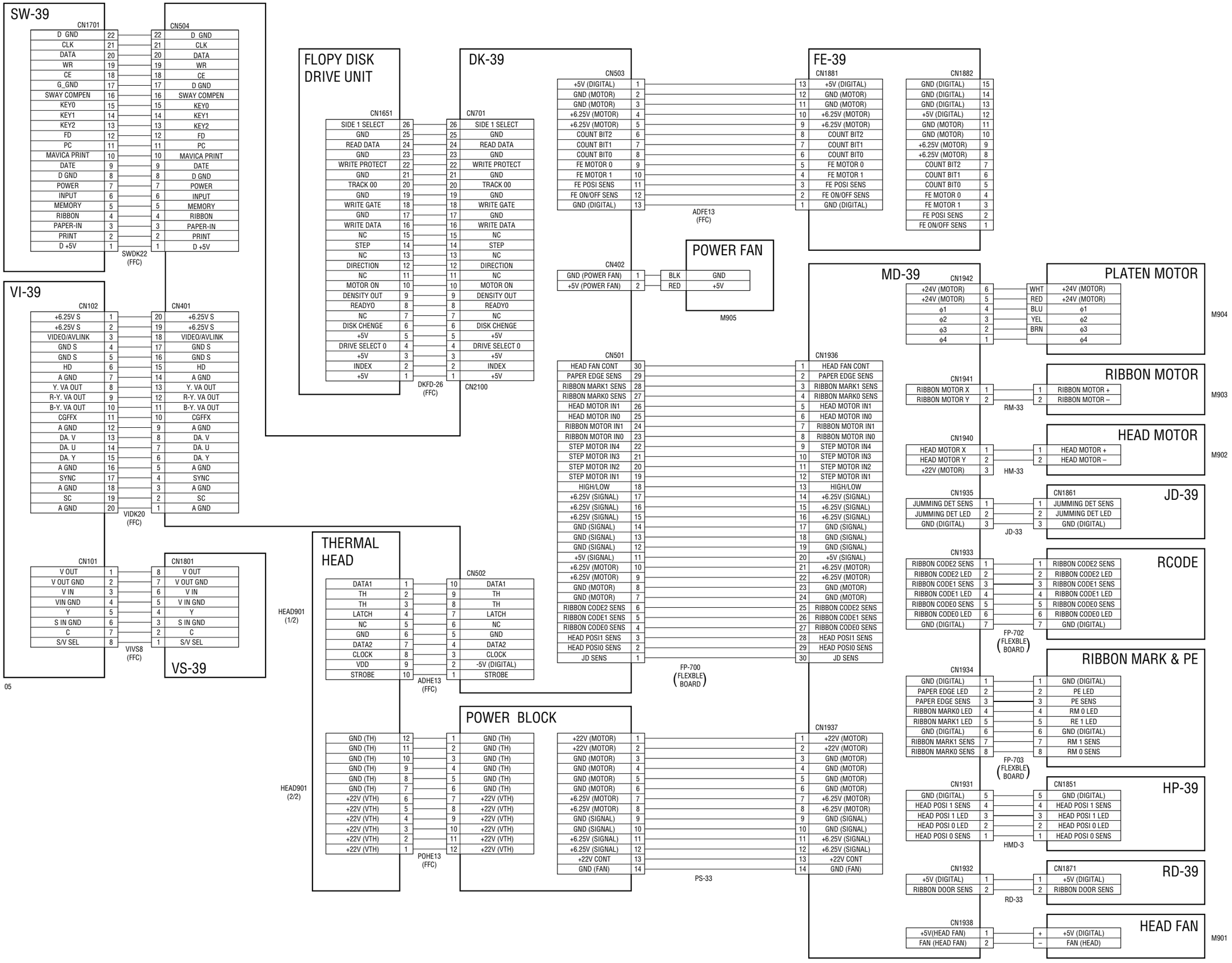
5-1. BLOCK DIAGRAM – VIDEO Section –



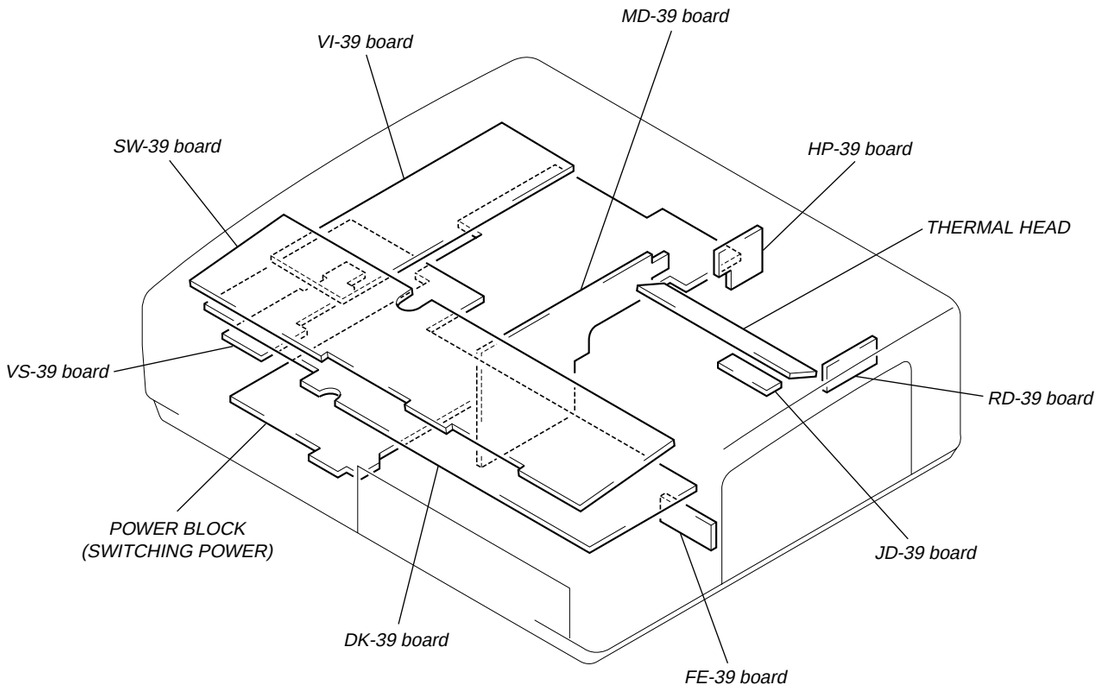
5-2. BLOCK DIAGRAM – MAIN Section –



5-3. FRAME SCHEMATIC DIAGRAM



- **Circuit Boards Location**



5-4. NOTES FOR PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.

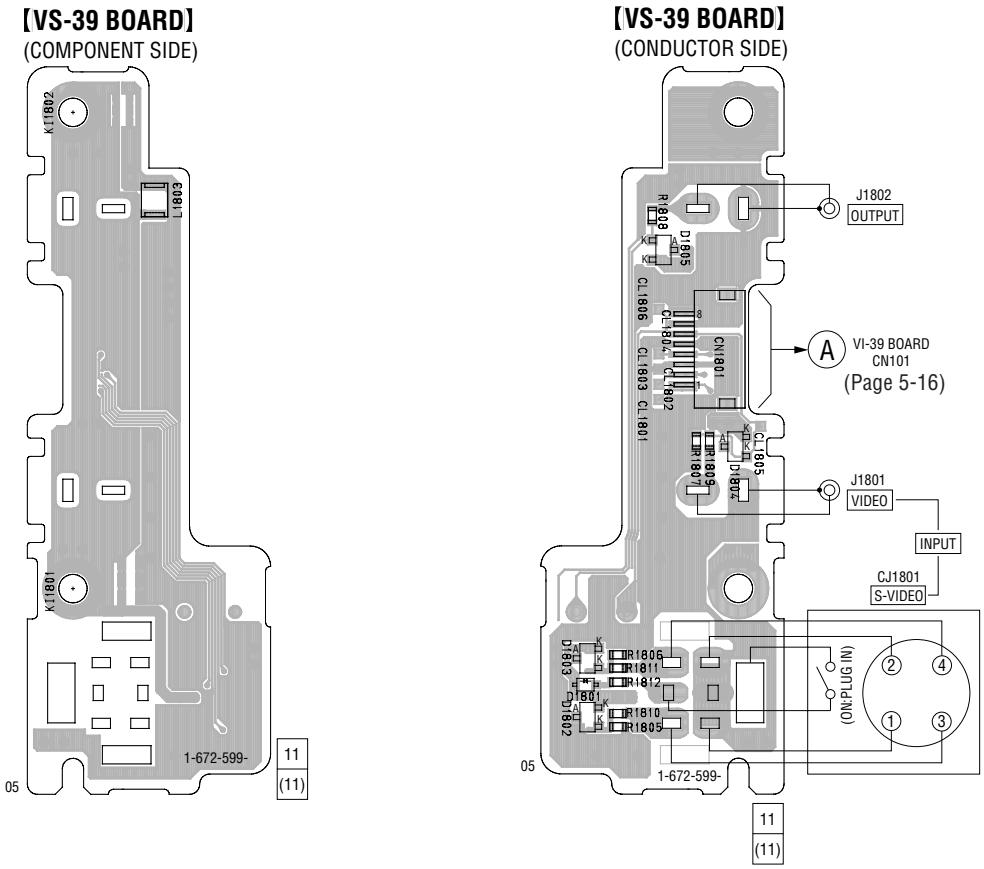
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- : nonflammable resistor.
- : panel designation.

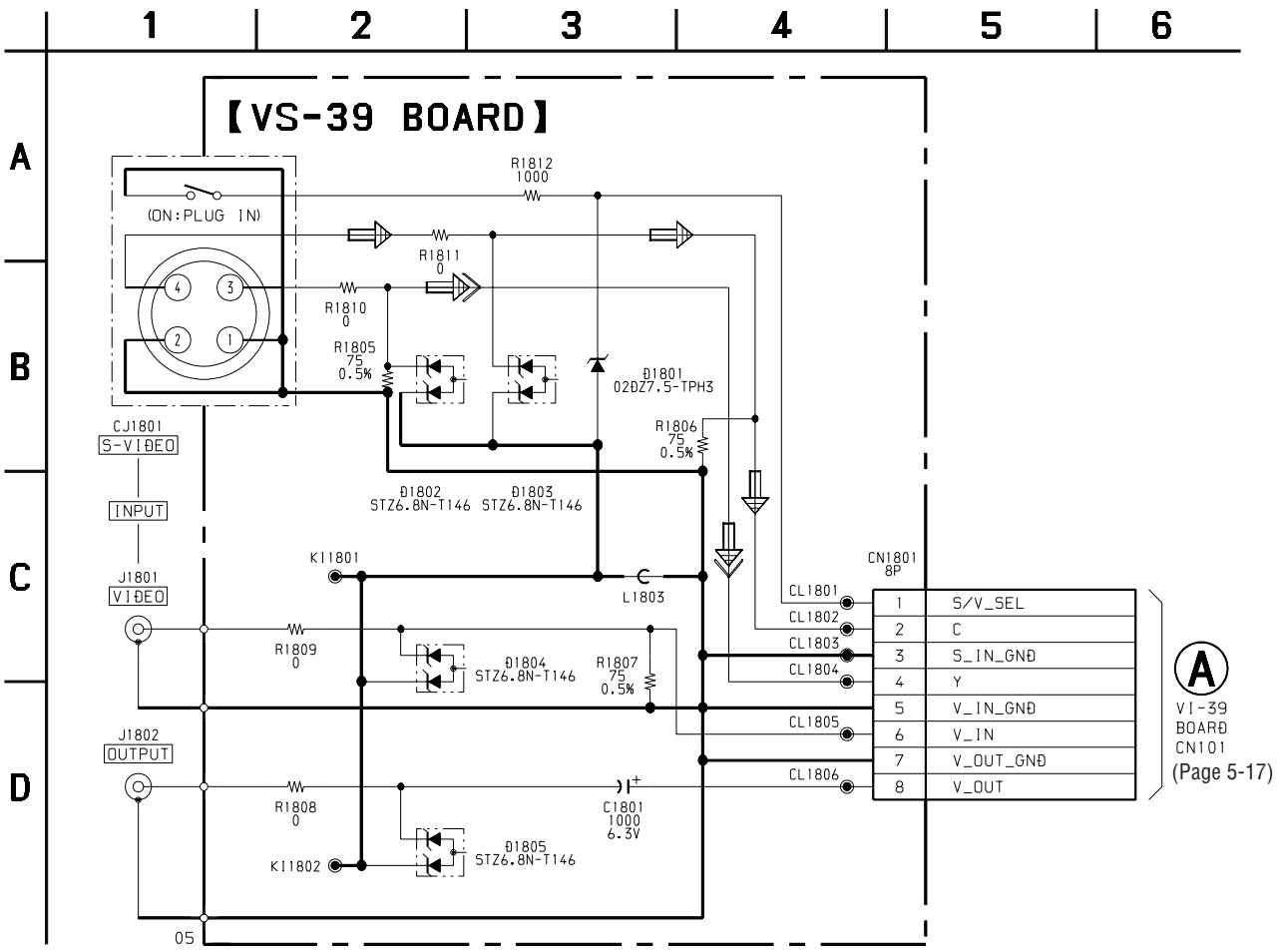
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground in color-bar signal input.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : COMPOSITE VIDEO
  - : Y SIGNAL
  - : CHROMA SIGNAL
  - : R-Y SIGNAL
  - : B-Y SIGNAL

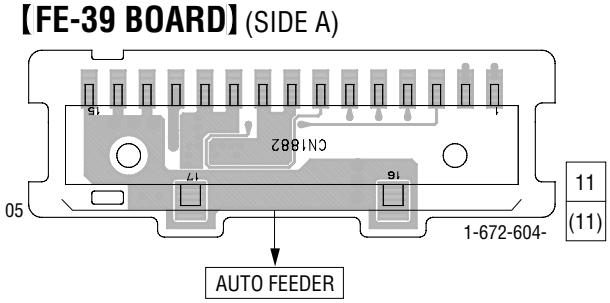
5-5. PRINTED WIRING BOARD – VS-39 Board – • See page 5-11 for Circuit Boards Location.

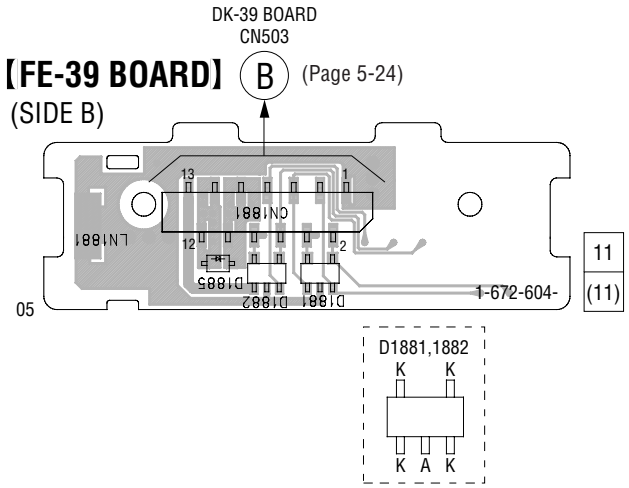


5-6. SCHEMATIC DIAGRAM – VS-39 Board –

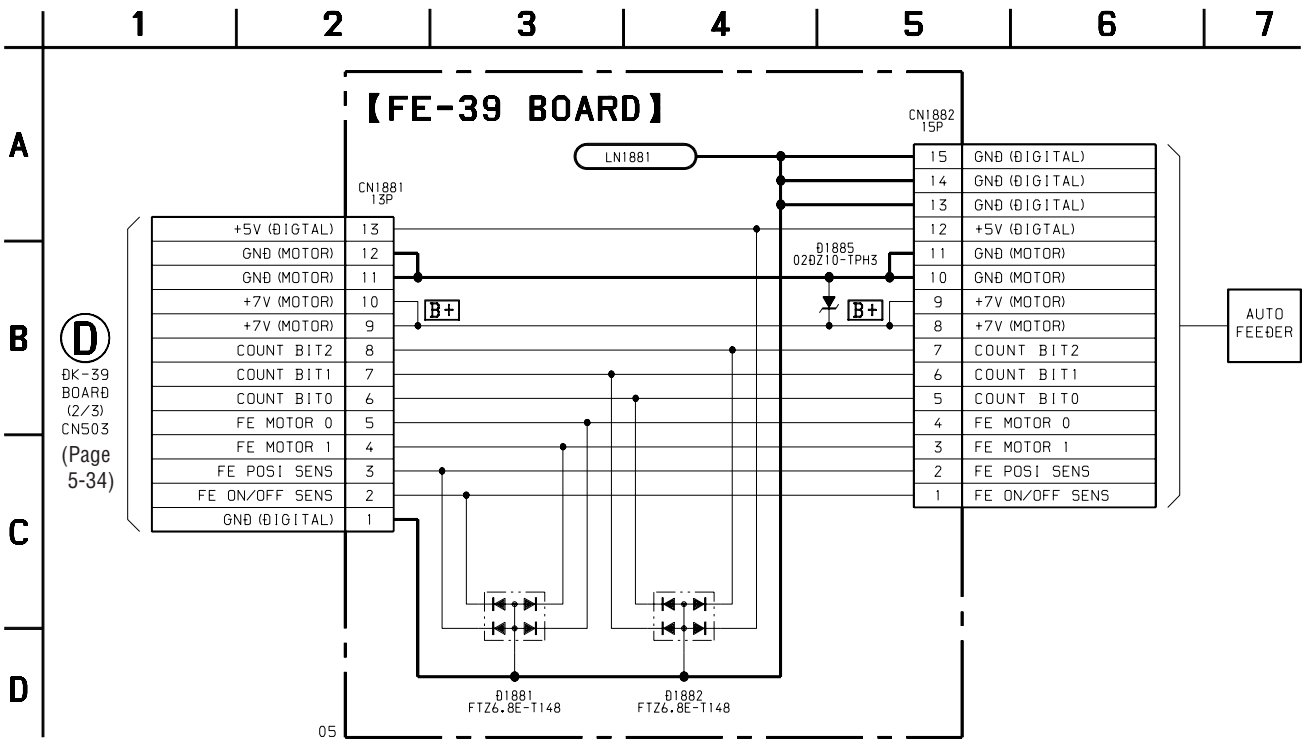


5-7. PRINTED WIRING BOARD – FE-39 Board – • See page 5-11 for Circuit Boards Location.





5-8. SCHEMATIC DIAGRAM – FE-39 Board –

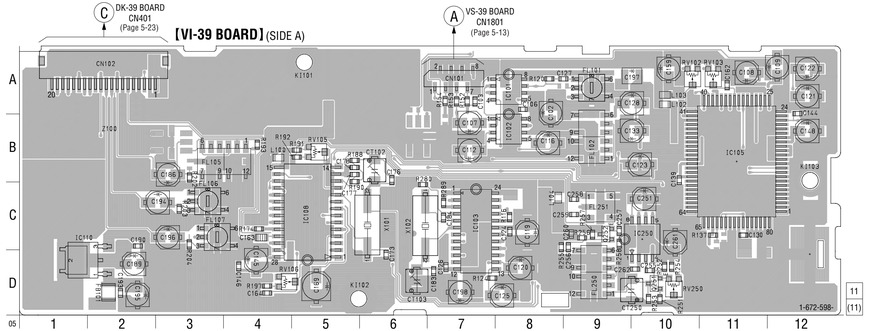


5-9. PRINTED WIRING BOARD – VI-39 Board –

• See page 5-11 for Circuit Boards Location.

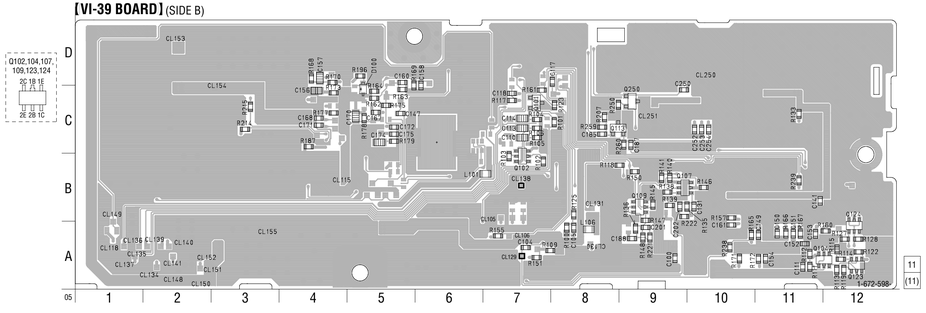
• **Semiconductor Location (Side A)**

Ref. No.	Location
IC101	A-8
IC102	B-8
IC103	C-7
IC105	B-11
IC108	C-5
IC110	C-1
IC250	C-10
Q251	D-10
Q252	C-9



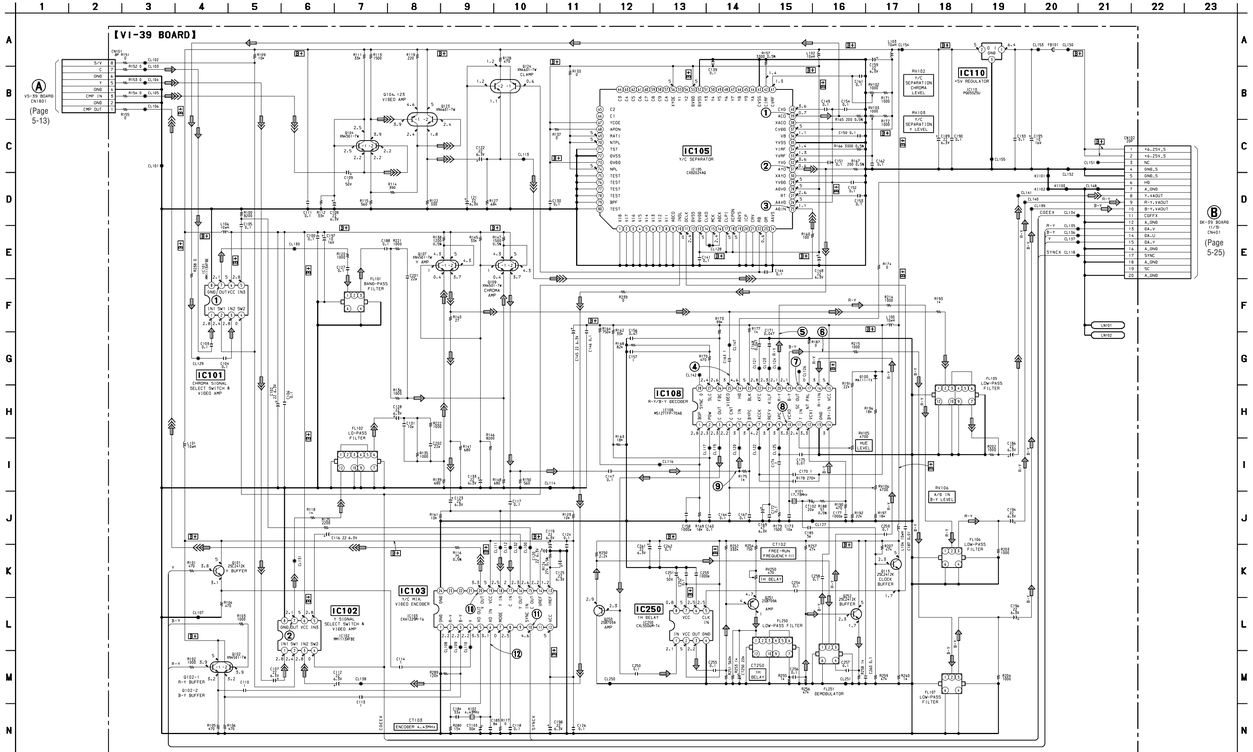
• **Semiconductor Location (Side B)**

Ref. No.	Location
D100	D-5
Q101	C-7
Q102	B-7
Q104	A-12
Q107	B-9
Q109	B-9
Q113	C-8
Q123	A-12
Q124	A-12
Q250	C-9



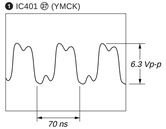
5-10. SCHEMATIC DIAGRAM – VI-39 Board –

• See page 5-46 for Waveforms. • See page 5-47 for IC Block Diagrams.

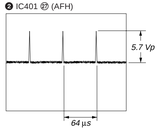

【VI-39 BOARD】
A VS-39 BOARD CN1801 (Page 5-13)
B DK-39 BOARD (1/2) CN401 (Page 5-25)
IC101 CHROMA SIGNAL SELECT SWITCH & VIDEO AMP
IC102 SYNC SELECT SWITCH & VIDEO AMP
IC103 SYNC VIDEO ENCODER
IC105 Y/C SEPARATOR
IC108 R-Y/B-Y DEMODULATOR
IC110 Y/C EQUALIZER
IC250 TV SOUND MULTI
IC108 CLOCK GENERATOR
IC108 FREE-RUN FREQUENCY
IC108 PHASE COMPARATOR
IC108 CHROMA AMP
IC108 BURST GATE
IC108 ACC AMP
IC108 R-Y DEMODULATOR
IC108 B-Y DEMODULATOR
IC108 R-Y/B-Y DEMODULATOR
IC108 CHROMA VCO
IC108 CHROMA PHASE SHIFT

• **Waveforms**
– DK-39 Board –

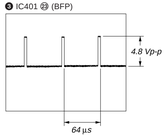
❶ IC401 ㉗ (YMCK)



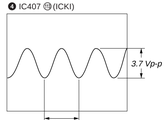
❷ IC401 ㉘ (AFH)



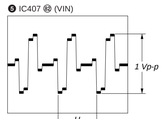
❸ IC401 ㉙ (BFP)



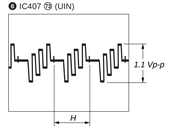
❹ IC407 ㉟ (ICKI)



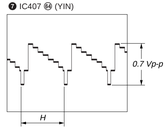
❺ IC407 ㊱ (VIN)



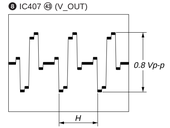
❻ IC407 ㉓ (UIN)



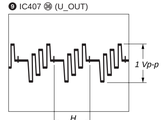
❼ IC407 ㉔ (YIN)



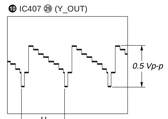
❽ IC407 ㉕ (V_OUT)



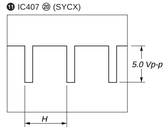
❾ IC407 ㉖ (U_OUT)



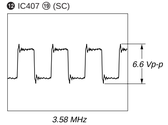
❿ IC407 ㉜ (Y_OUT)



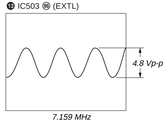
⓫ IC407 ㉘ (SYCX)



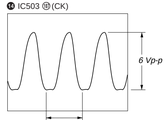
⓬ IC407 ㉙ (SC)



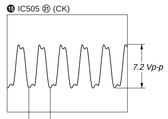
⓭ IC503 ㉖ (EXTL)



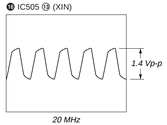
⓮ IC503 ⑰ (CK)



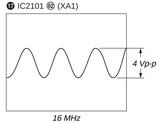
⓯ IC505 ⑰ (CK)



⓰ IC505 ⑬ (XIN)



⓱ IC2101 ㉒ (XA1)

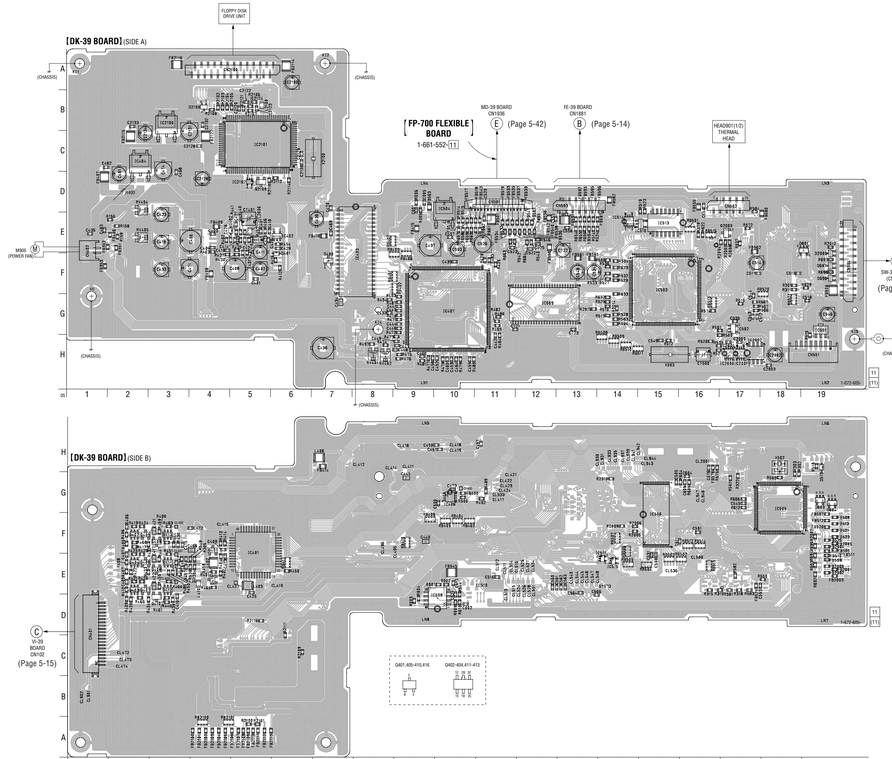


• **Semiconductor Location (Side A)**

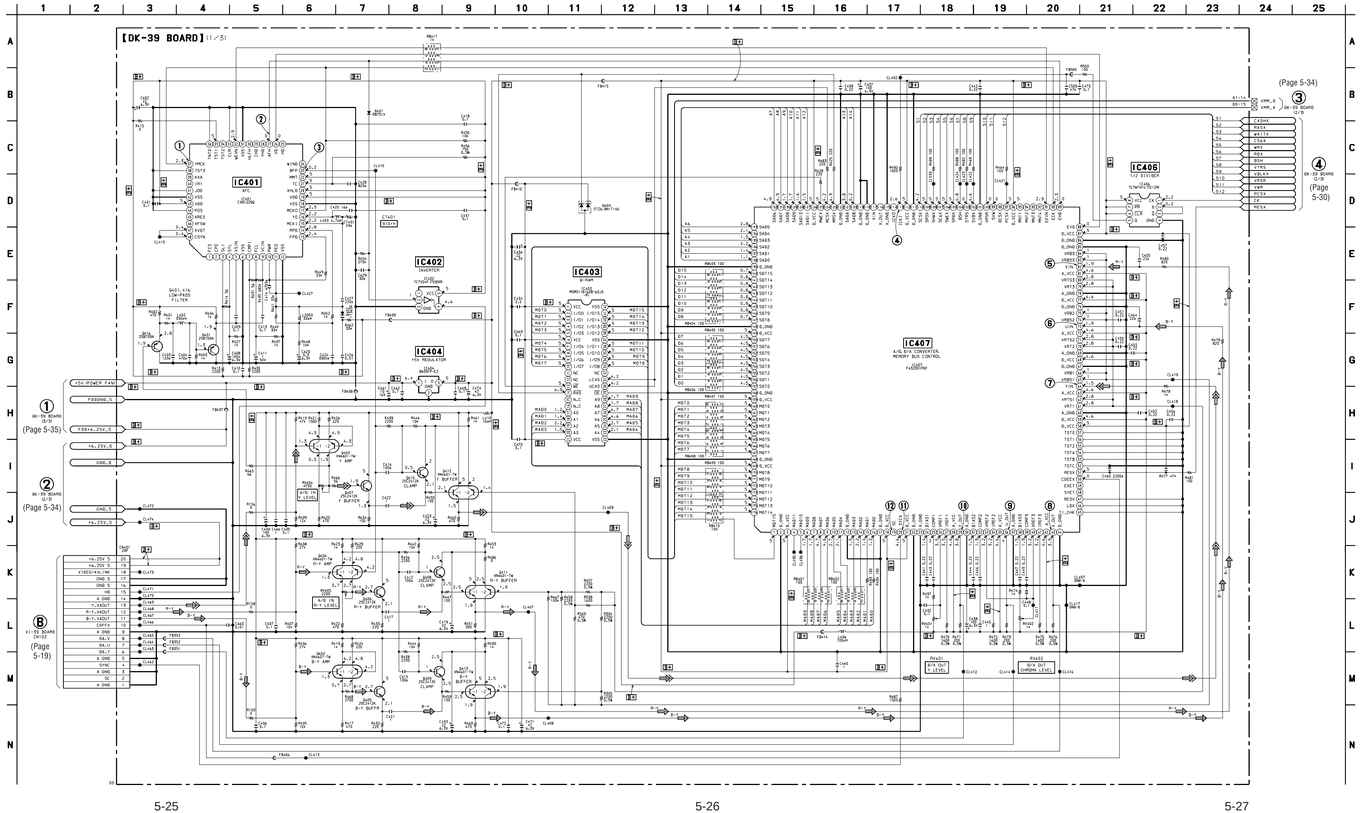
Ref. No.	Location
D400	F-7
D401	F-6
D402	E-5
D601	E-19
D696	F-19
D697	F-19
D2000	F-19
D2100	B-4
IC402	E-6
IC403	F-8
IC404	C-2
IC407	G-10
IC501	G-19
IC502	G-17
IC503	F-15
IC504	D-10
IC509	G-12
IC510	E-15
IC513	E-15
IC514	E-14
IC2000	H-17
IC2001	H-17
IC2002	H-17
IC2100	B-3
IC2101	C-5
IC2102	D-5
Q2000	E-17
Q2100	D-5

• **Semiconductor Location (Side B)**

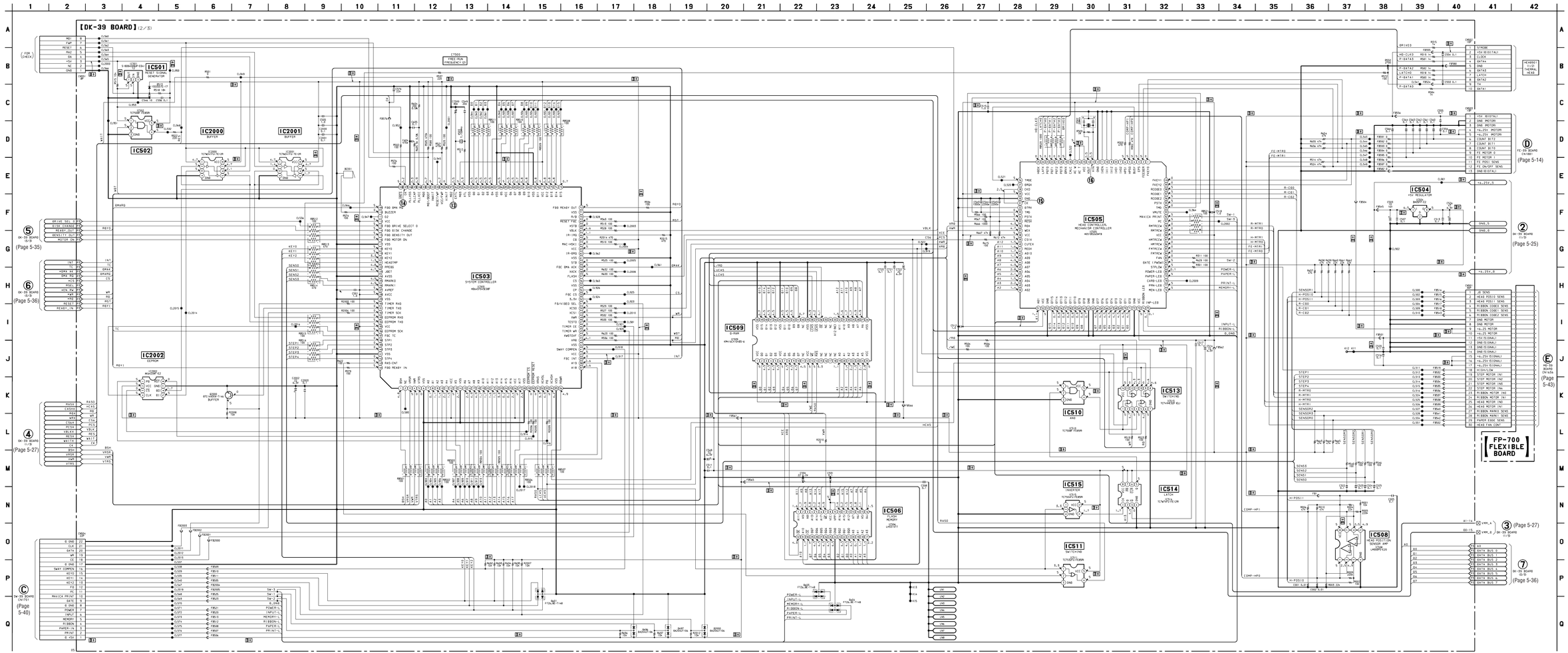
Ref. No.	Location
D513	H-19
D603	G-19
D604	G-19
IC401	F-5
IC406	G-10
IC505	G-18
IC506	F-15
IC508	D-10
IC511	E-14
IC515	E-14
Q401	F-4
Q402	F-2
Q403	E-2
Q404	E-2
Q405	F-2
Q406	E-2
Q407	E-2
Q408	E-3
Q409	F-3
Q410	D-3
Q411	E-3
Q412	F-3
Q413	F-3
Q416	E-4



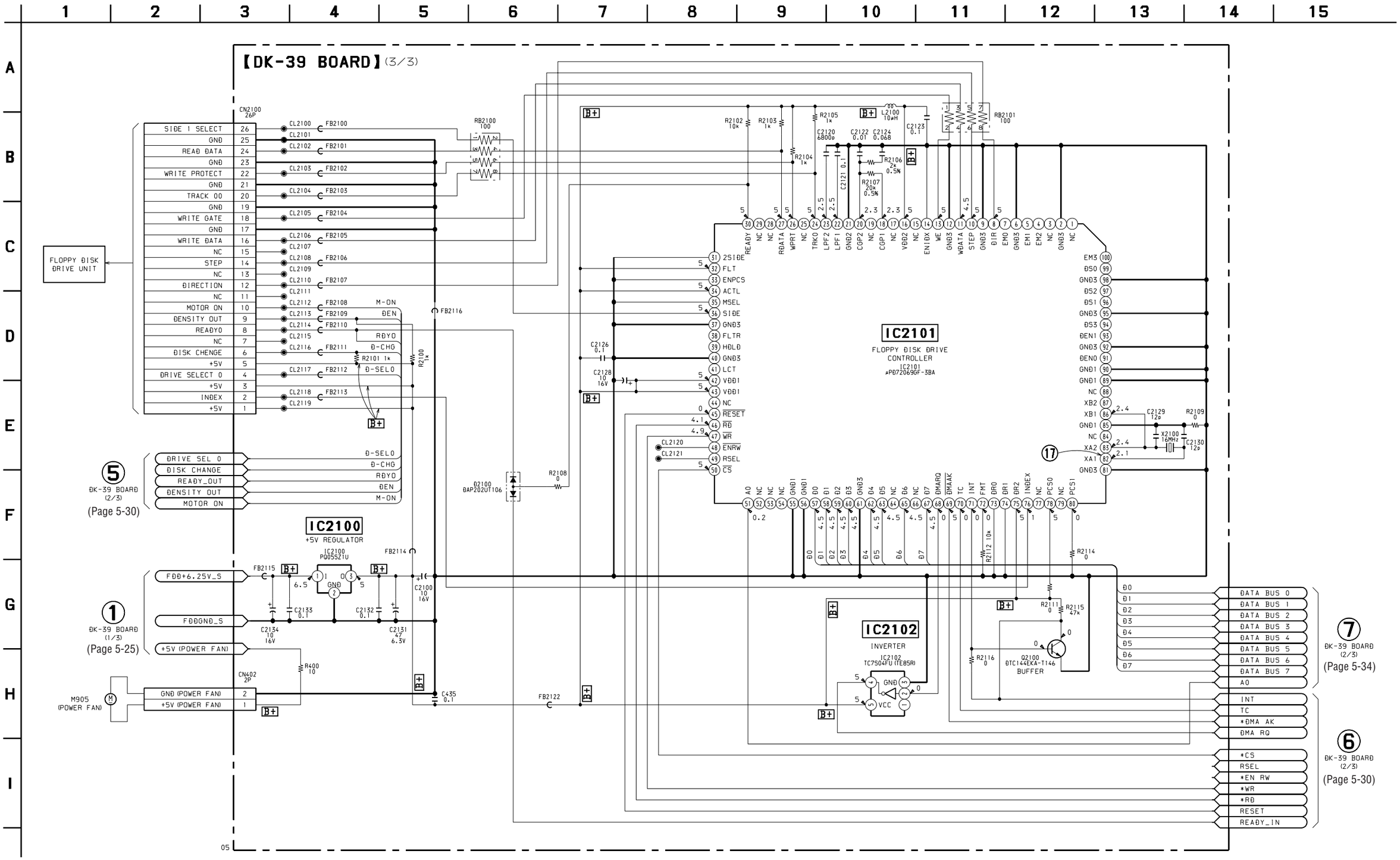
5-12. SCHEMATIC DIAGRAM – DK-39 Board (1/3) – • See page 5-21 for Waveforms.



5-13. SCHEMATIC DIAGRAM – DK-39 Board (2/3) – • See page 5-21 for Waveforms.



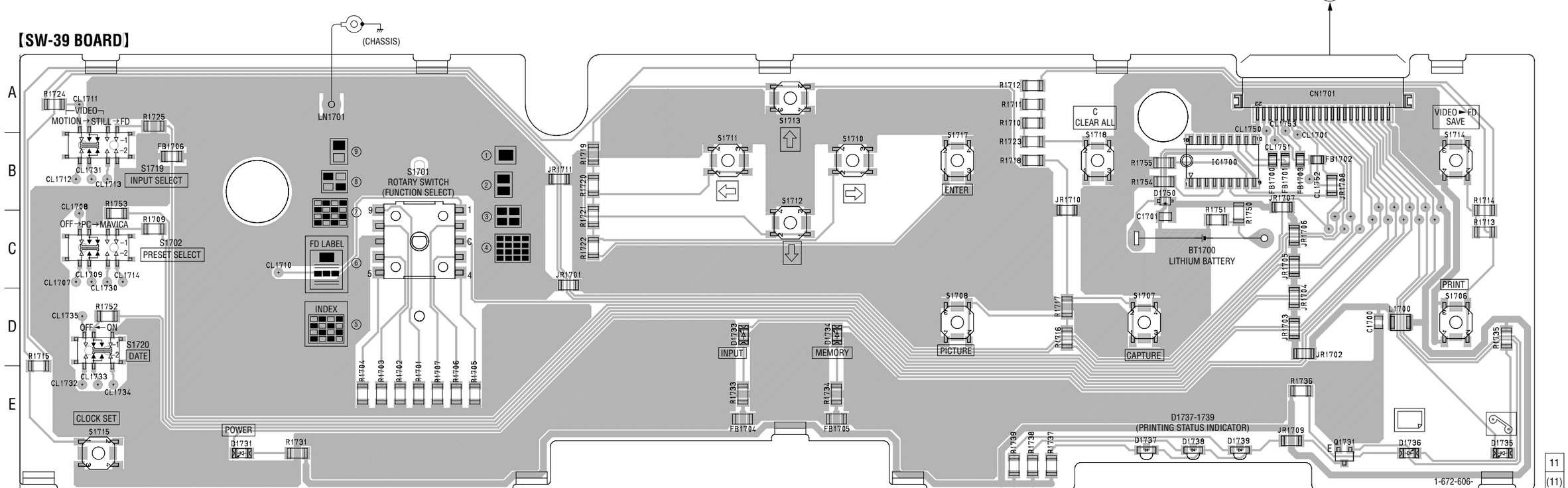
5-14. SCHEMATIC DIAGRAM – DK-39 Board (3/3) – • See page 5-21 for Waveforms.



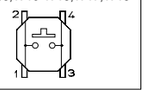
5-15. PRINTED WIRING BOARD – SW-39 Board –

• See page 5-11 for Circuit Boards Location.

【SW-39 BOARD】



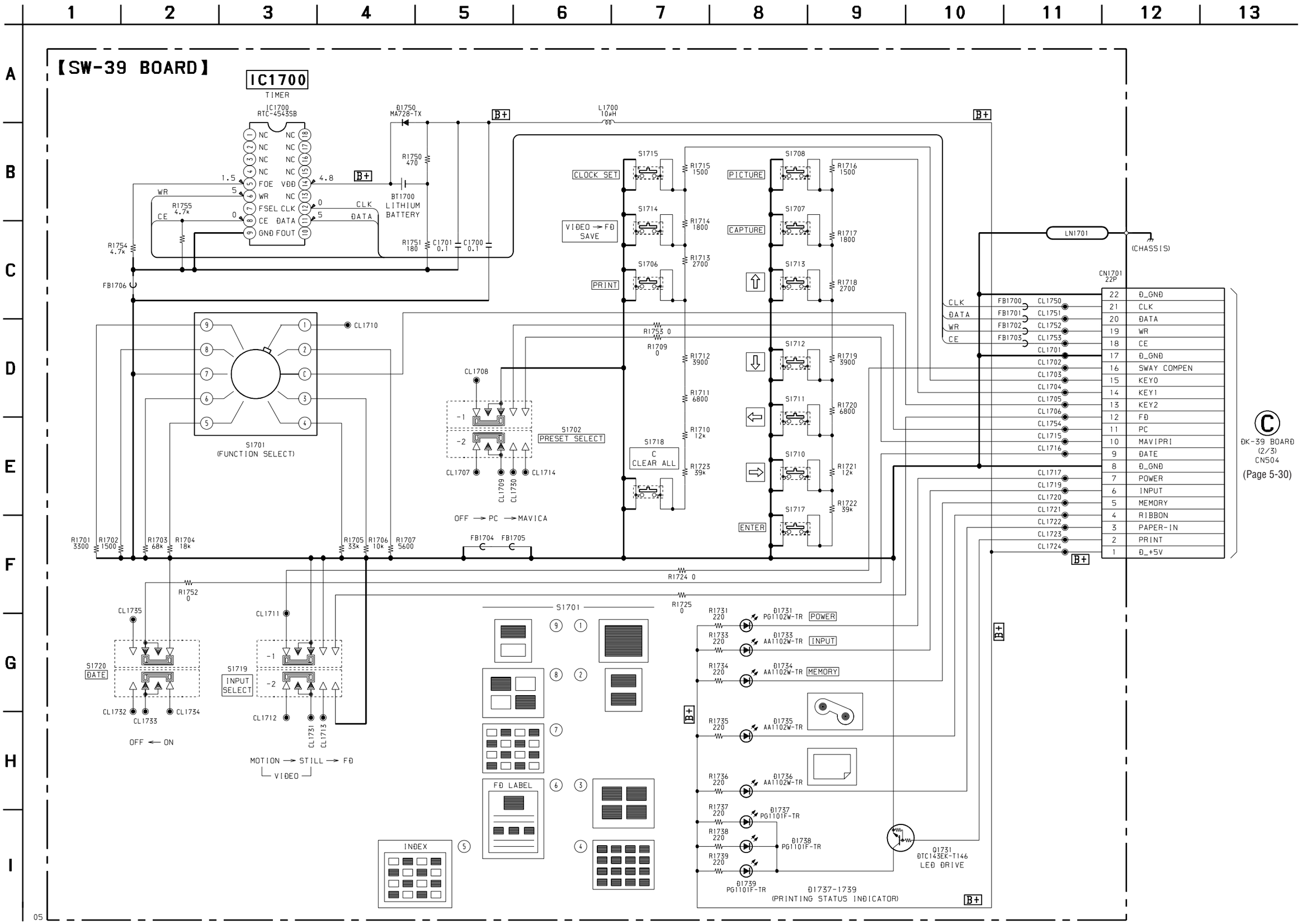
S1706-1708,1710-1715,1717,1718



- **Semiconductor Location**

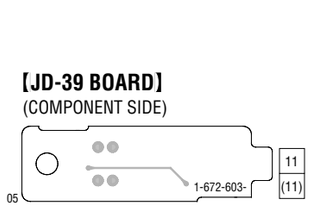
Ref. No.	Location
D1731	E-3
D1733	D-10
D1734	D-11
D1735	E-19
D1736	E-18
D1737	E-15
D1738	E-16
D1739	E-16
D1750	B-15
IC1700	B-16
Q1731	E-17

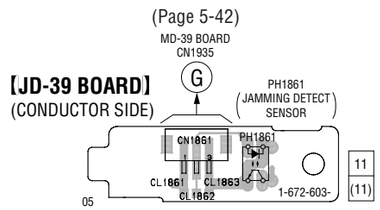
5-16. SCHEMATIC DIAGRAM – SW-39 Board – • See page 5-50 for IC Block Diagram.

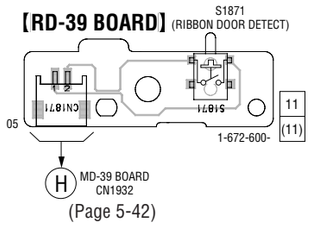


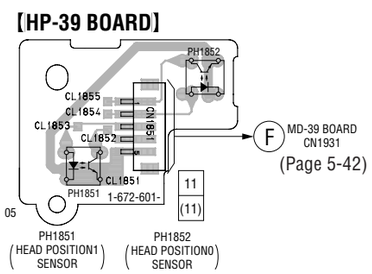
5-17. PRINTED WIRING BOARDS – MD-39/JD-39/RD-39/HP-39 Boards –

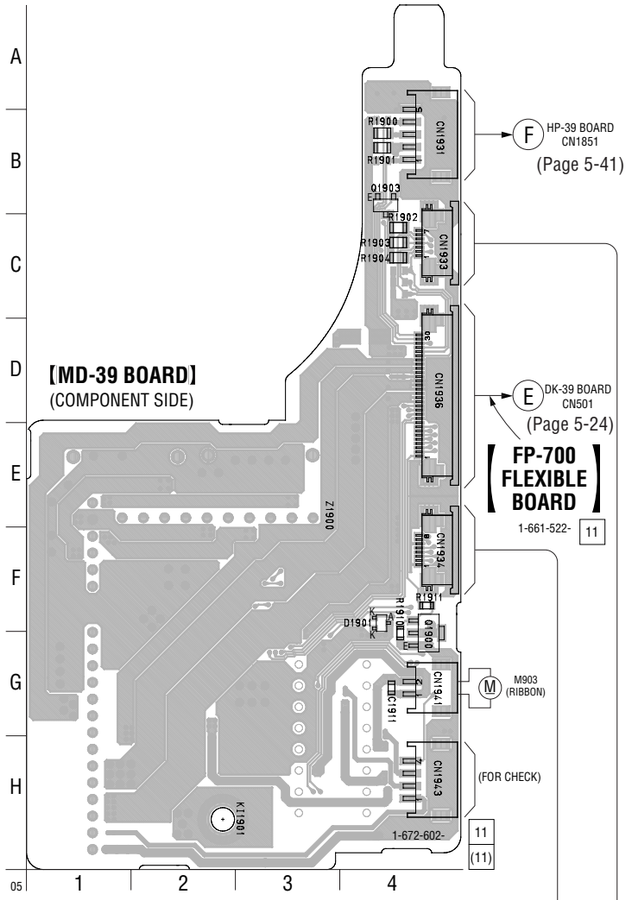
• See page 5-11 for Circuit Boards Location.

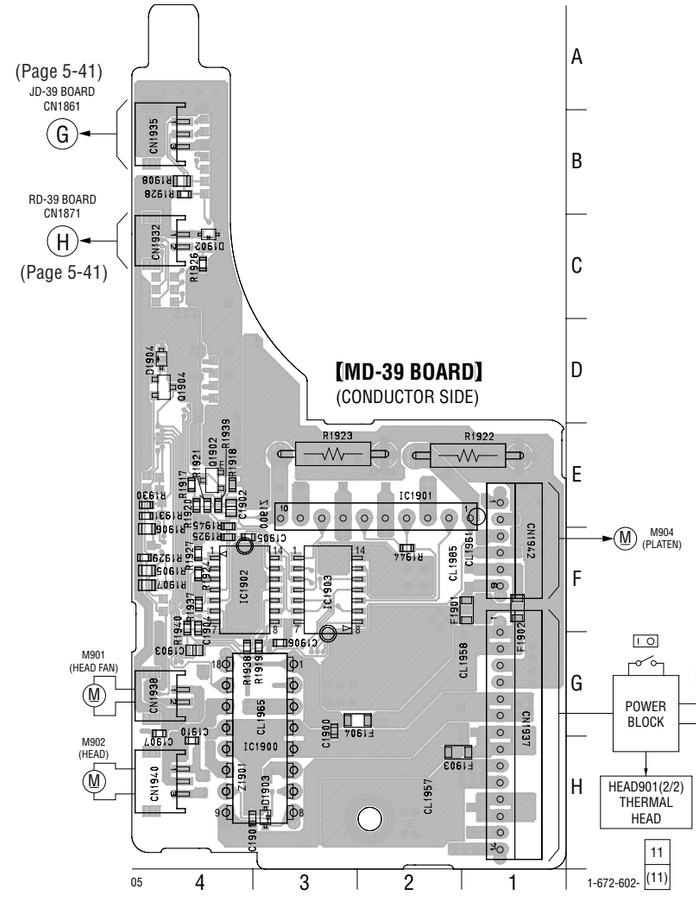


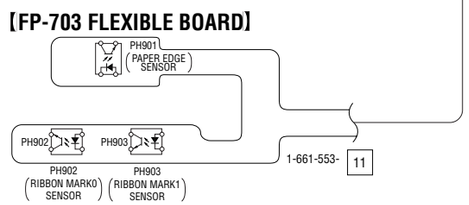


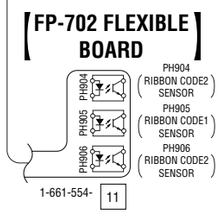












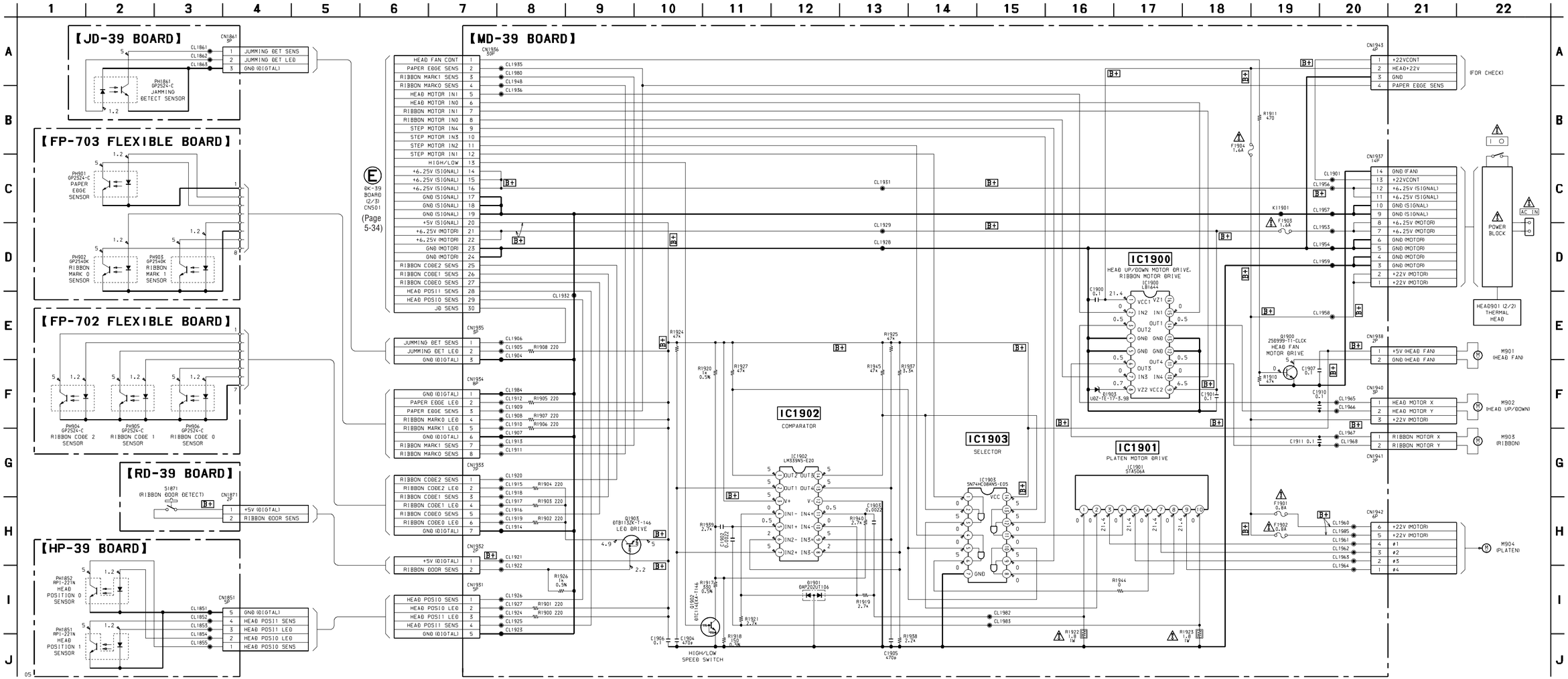
- **Semiconductor Location (Component Side)**

Ref. No.	Location
D1901	F-4
IC1901	E-2
Q1900	G-4
Q1903	B-4

- **Semiconductor Location (Conductor Side)**

Ref. No.	Location
D1903	H-3
IC1900	G-3
IC1902	F-4
IC1903	F-3
Q1902	E-4

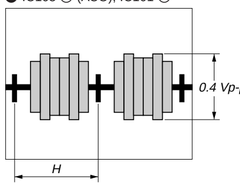
5-18. SCHEMATIC DIAGRAM – MD-39/JD-39/RD-39/HP-39 Boards – • See page 5-49 for IC Block Diagrams.



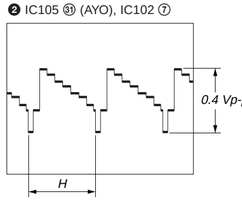
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

• Waveforms
– VI-39 Board –

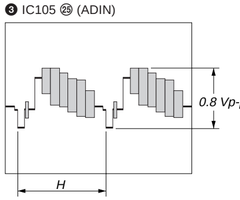
❶ IC105 ㊳ (ACO), IC101 ⑦



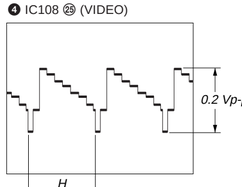
❷ IC105 ㉛ (AYO), IC102 ⑦



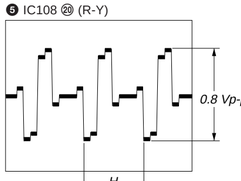
❸ IC105 ㉕ (ADIN)



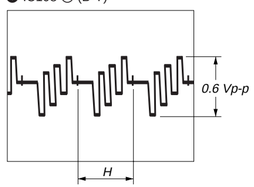
❹ IC108 ㉕ (VIDEO)



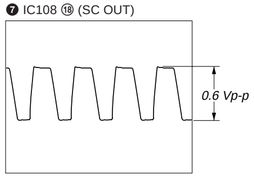
❺ IC108 ⑳ (R-Y)



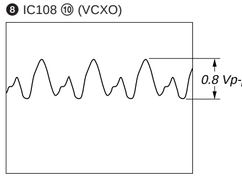
❻ IC108 ⑲ (B-Y)



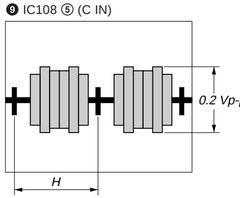
❼ IC108 ⑱ (SC OUT)



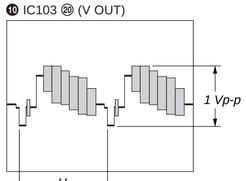
❽ IC108 ⑩ (VCXO)



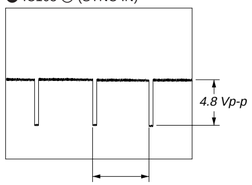
❾ IC108 ⑤ (C IN)



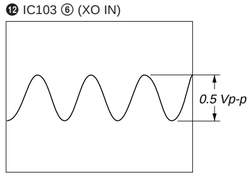
❿ IC103 ⑳ (V OUT)



⓫ IC103 ⑩ (SYNC IN)

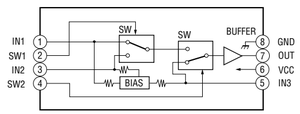


⓬ IC103 ⑥ (XO IN)

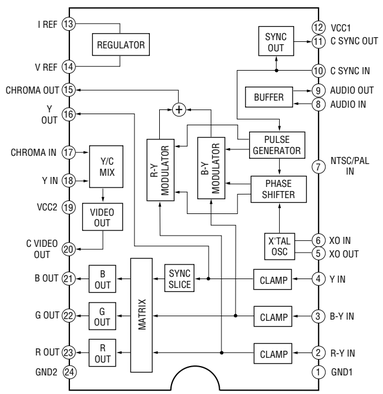


• IC Block Diagrams
– VI-39 Board –

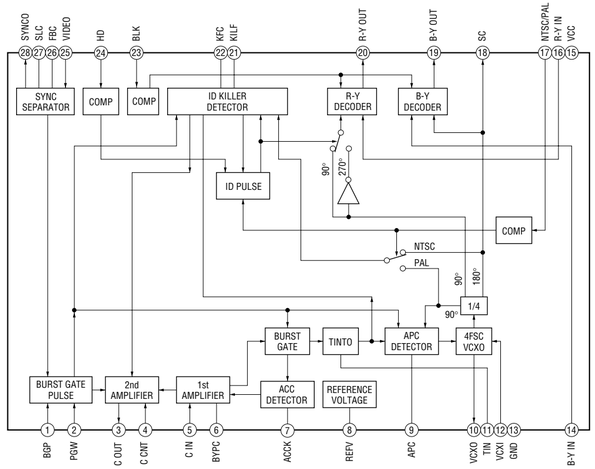
IC101, 102 MM1113XFBE



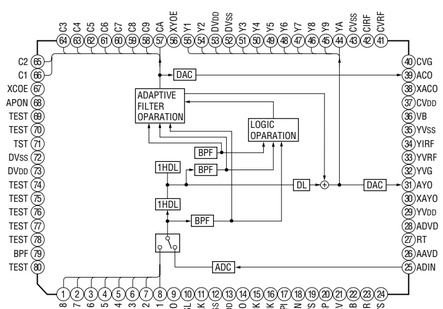
IC103 CXA1229M-T6



IC108 M5127FP-70AD

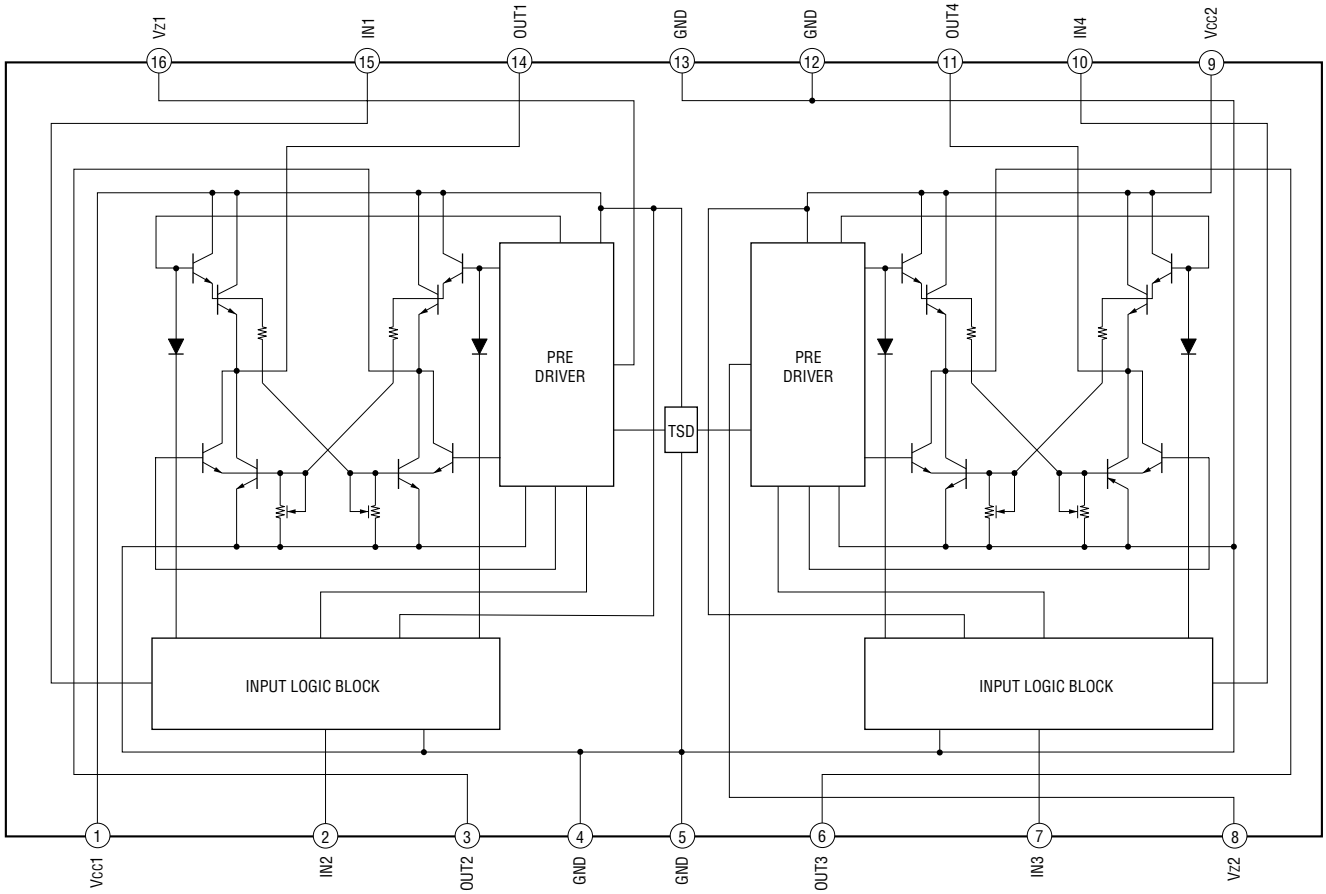


IC105 CXD2024AQ

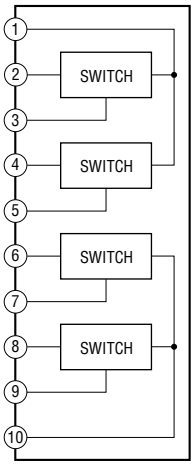


– MD-39 Board –

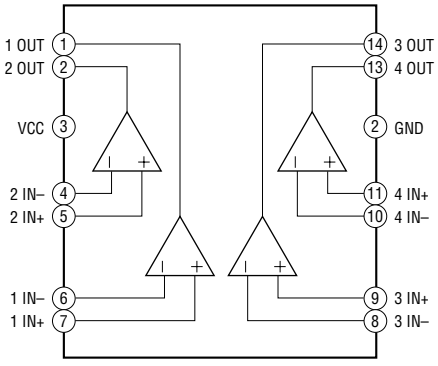
IC1900 LB1644



IC1901 STA506A

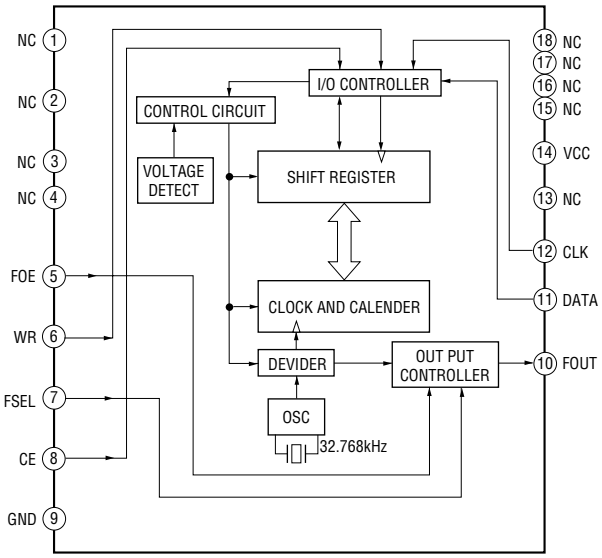


IC1902 LM339NS-E20



– SW-39 Board –

IC1700 RTC-4543SB



5-19. IC PIN FUNCTION DESCRIPTION

• DK-39 BOARD IC407 F432301PGF (A/D, D/A CONVERTER, MEMORY BUS CONTROL)

Pin No.	Pin Name	I/O	Function
1	MDT15	I/O	Two-way data bus with the D-RAM (IC403) (upper 8 bit)
2	DGND	—	Ground terminal (logic system)
3	DVCC	—	Power supply terminal (+5V) (logic system)
4, 5	MAD11, MAD10	O	Address signal output terminal Not used (open)
6 to11	MAD9 to MAD4	O	Address signal output to the D-RAM (IC403)
12	DGND	—	Ground terminal (logic system)
13 to16	MAD3 to MAD0	O	Address signal output to the D-RAM (IC403)
17	DGND	—	Ground terminal (logic system)
18	DVCC	—	Power supply terminal (+5V) (logic system)
19	SC	O	Sub carrier output terminal Not used (open)
20	SYCX	O	Composite sync signal output to the CXA1229M (IC103)
21	DVCC	—	Power supply terminal (+5V) (logic system)
22	DGND	—	Ground terminal (logic system)
23	AGND	—	Ground terminal (D/A converter, analog system)
24	BIAS1	I/O	Bias control terminal of the D/A converter
25	COMP1	I/O	Comparator in/out terminal of the D/A converter
26	VREF1	I	Reference voltage (+3V) input terminal Used for the D/A output level adjustment of luminance signal (Y signal)
27	IREF1	I/O	Reference current control terminal
28	AVCC	—	Power supply terminal (+5V) (D/A converter, analog system)
29	Y OUT	O	Analog Y signal output terminal (luminance signal output terminal)
30	AGND	—	Ground terminal (D/A converter, analog system)
31	BIAS2	I/O	Bias control terminal of the D/A converter
32	COMP2	I/O	Comparator in/out terminal of the D/A converter
33	VREF2	I	Reference voltage (+3V) input terminal Used for the D/A output level adjustment of chroma signal
34	IREF2	I/O	Reference current control terminal
35	AVCC	—	Power supply terminal (+5V) (D/A converter, analog system)
36	U OUT	O	Analog U signal output terminal (B-Y color difference signal output terminal)
37	AGND	—	Ground terminal (D/A converter, analog system)
38	BIAS3	I/O	Bias control terminal of the D/A converter
39	COMP3	I/O	Comparator in/out terminal of the D/A converter
40	VREF3	I	Reference voltage (+3V) input terminal Used for the D/A output level adjustment of chroma signal
41	IREF3	I/O	Reference current control terminal
42	AVCC	—	Power supply terminal (+5V) (D/A converter, analog system)
43	V OUT	O	Analog V signal output terminal (R-Y color difference signal output terminal)
44	DGND	—	Ground terminal (logic, digital system)
45	TI CHK	I	Test input terminal (normally: fixed at “L”)
46	LDX	I	Test input terminal (normally: fixed at “L”)
47	RESV	I	Reset signal input for the internal SG V “H”: reset Not used (fixed at “L”)
48	SYET	O	Sync selection signal output at external reading Not used (open)
49	EXET	O	Internal/external selection signal output terminal Not used (open)
50	CGEEX	O	EE, WR/READ select signal output to the video input circuit (IC101, 102) and Y/C separator (IC105)
51	$\overline{\text{RESX}}$	I	System reset signal input from the reset signal generator (IC501) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”

Pin No.	Pin Name	I/O	Function
52	TSTC	I	Test input terminal (normally: fixed at “L”)
53	TSTB	I	
54	TSTA	I	
55	TST2	I	
56	TST1	I	
57	TST0	I	
58	DVCC	—	Power supply terminal (+5V) (logic system)
59	DVCC	—	Power supply terminal (+5V) (A/D converter, digital system)
60	AGND	—	Ground terminal (A/D converter, analog system)
61	VRT1	I	Reference voltage (top side) input of the A/D converter
62	VRTS1	O	Reference voltage (top side) output of the A/D converter Generated 3V at connected to VRT1 (pin ⑥①)
63	AVCC	—	Power supply terminal (+5V) (A/D converter, analog system)
64	Y IN	I	Analog Y signal input terminal (luminance signal input terminal)
65	VRBS1	O	Reference voltage (bottom side) output of the A/D converter Generated 1V at connected to VRB1 (pin ⑥⑥)
66	VRB1	I	Reference voltage (bottom side) input of the A/D converter
67	DGND	—	Ground terminal (A/D converter, digital system)
68	DVCC	—	Power supply terminal (+5V) (A/D converter, digital system)
69	AGND	—	Ground terminal (A/D converter, analog system)
70	VRT2	I	Reference voltage (top side) input of the A/D converter
71	VRTS2	O	Reference voltage (top side) output of the A/D converter Generated 3V at connected to VRT2 (pin ⑦⓪)
72	AVCC	—	Power supply terminal (+5V) (A/D converter, analog system)
73	U IN	I	Analog U signal input terminal (B-Y color difference signal input terminal)
74	VRBS2	O	Reference voltage (bottom side) output of the A/D converter Generated 1V at connected to VRB2 (pin ⑦⑤)
75	VRB2	I	Reference voltage (bottom side) input of the A/D converter
76	DGND	—	Ground terminal (A/D converter, digital system)
77	DVCC	—	Power supply terminal (+5V) (A/D converter, digital system)
78	AGND	—	Ground terminal (A/D converter, analog system)
79	VRT3	I	Reference voltage (top side) input of the A/D converter
80	VRTS3	O	Reference voltage (top side) output of the A/D converter Generated 3V at connected to VRT3 (pin ⑦⑨)
81	AVCC	—	Power supply terminal (+5V) (A/D converter, analog system)
82	V IN	I	Analog V signal input terminal (R-Y color difference signal input terminal)
83	VRBS3	O	Reference voltage (bottom side) output of the A/D converter Generated 1V at connected to VRB3 (pin ⑧④)
84	VRB3	I	Reference voltage (bottom side) input of the A/D converter
85	DGND	—	Ground terminal (A/D converter, digital system)
86	DGND	—	Ground terminal (logic system)
87	DVCC	—	Power supply terminal (+5V) (logic system)
88	EVD	I	Vertical drive data input from the CXD1229Q (IC401)
89	EHD	I	Horizontal drive data input from the CXD1229Q (IC401)
90	ECK	I	Serial clock signal input from the CXD1229Q (IC401)
91	EEVN	I	E/O input from the CXD1229Q (IC401)
92	MNT4	O	Test monitor output terminal (normally: open)
93	MNT3	O	Test monitor output terminal (normally: open)

Pin No.	Pin Name	I/O	Function
94	MNT2	O	Test monitor output terminal (normally: open)
95	MNT1	O	Test monitor output terminal (normally: open)
96	DVCC	—	Power supply terminal (+5V) (logic system)
97	PCSX	O	Chip select signal output to the mechanism controller (IC505)
98	DCSX	O	Chip select signal output terminal Not used (open)
99	SVW	I	Data write end latch pulse input from the system controller (IC503)
100	VRSR	I	Refresh stop request input from the system controller (IC503)
101	DGND	—	Ground terminal (logic system)
102	SVBK	O	V blanking interrupt signal output to the system controller (IC503)
103	STRS	O	Busy signal output to the system controller (IC503)
104	BSH	O	Status (CPU emancipation of memory bus) output to the system controller (IC503)
105	SRDX	I	Data read enable signal input from the system controller (IC503)
106	SWEX	I	Data write enable signal input from the system controller (IC503)
107	SC6X	I	Chip select signal input from the system controller (IC503)
108	SHWX	O	CPU D-RAM access wait control signal output to the system controller (IC503)
109	SRSX	I	Row address strobe signal input from the system controller (IC503)
110	SCSX	I	Column address strobe signal input from the system controller (IC503)
111	DGND	—	Ground terminal (logic system)
112	DVCC	—	Power supply terminal (+5V) (logic system)
113	ICKI	I	System clock signal (for INT SG) input from the system controller (IC503)
114	ICKO	O	System clock signal output terminal Not used (open)
115	XGND	—	Ground terminal (crystal system)
116	XOUT	O	System clock signal output terminal Not used (open)
117	XIN	I	System clock signal input terminal Not used (fixed at “L”)
118, 119	DGND	—	Ground terminal (logic system)
120	SADB	I	Address signal input for the chip select signal generate Connected to address bus (A14)
121	SADA	I	Address signal input for the chip select signal generate Connected to address bus (A13)
122	DGND	—	Ground terminal (logic system)
123	$\overline{\text{MRSX}}$	O	Row address strobe signal output to the D-RAM (IC403)
124	MCSX	O	Column address strobe signal output to the D-RAM (IC403)
125	$\overline{\text{MWEX}}$	O	Write enable signal output to the D-RAM (IC403)
126	DVCC	—	Power supply terminal (+5V) (logic system)
127 to138	SAD11 to SAD0	I	Address signal input from the system controller (IC503)
139	DGND	—	Ground terminal (logic system)
140 to147	SDT15 to SDT8	I/O	Two-way data bus with the system controller (IC503), mechanism controller (IC505) and D-RAM (IC509) (upper 8 bit)
148	DGND	—	Ground terminal (logic system)
149	DVCC	—	Power supply terminal (+5V) (logic system)
150 to157	SDT7 to SDT0	I/O	Two-way data bus with the system controller (IC503), mechanism controller (IC505), flash memory (IC506), D-RAM (IC509) and floppy disk drive controller (IC2101) (lower 8 bit)
158	DGND	—	Ground terminal (logic system)
159	DVCC	—	Power supply terminal (+5V) (logic system)
160 to167	MDT0 to MTD7	I/O	Two-way data bus with the D-RAM (IC403) (lower 8 bit)
168	DGND	—	Ground terminal (logic system)
169	DVCC	—	Power supply terminal (+5V) (logic system)
170 to176	MDT8 to MTD14	I/O	Two-way data bus with the D-RAM (IC403) (upper 8 bit)

• **DK-39 BOARD IC503 HD6437045E08F (SYSTEM CONTROLLER)**

Pin No.	Pin Name	I/O	Function
1	BSH	I	Status (CPU emancipation of memory bus) input from the A/D, D/A converter (IC407)
2	NC	—	Not used (open)
3	VRSR	O	Refresh stop request output to the A/D, D/A converter (IC407)
4	VWR	O	Internal register data write end latch pulse output to the A/D, D/A converter (IC407)
5	VTRS	I	Busy signal input from the A/D, D/A converter (IC407)
6	VSS	—	Ground terminal
7	A0	O	Address signal output to the flash memory (IC506) and floppy disk drive controller (IC2101)
8 to 11	A1 to A4	O	Address signal output to the A/D, D/A converter (IC407), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
12	VCC	—	Power supply terminal (+5V)
13	A5	O	Address signal output to the A/D, D/A converter (IC407), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
14	VSS	—	Ground terminal
15 to 21	A6 to A12	O	Address signal output to the A/D, D/A converter (IC407), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
22, 23	A13, A14	O	Address signal output to the A/D, D/A converter (IC407) and flash memory (IC506)
24, 25	A15, A16	O	Address signal output to the flash memory (IC506)
26	VCC	—	Power supply terminal (+5V)
27	A17	O	Address signal output to the flash memory (IC506)
28	VSS	—	Ground terminal
29	$\overline{\text{EEPROM CS}}$	O	Chip select signal output to the EEPROM (IC2002) "L": select
30	$\overline{\text{EEPROM RESET}}$	O	Reset signal output to the EEPROM (IC2002) "L": reset
31	XRAS	O	Row address strobe signal output terminal "L" active
32	XCASL	O	Lower byte column address strobe signal output to the D-RAM (IC509) "L" active
33	PD	I	LVD signal input from the EEPROM (IC2002)
34	XCASH	O	Upper byte column address strobe signal output to the D-RAM (IC509) "L" active
35	VSS	—	Ground terminal
36	RDWR	O	Data write enable signal output to the D-RAM (IC509)
37, 38	A18, A19	O	Address signal output terminal Not used
39	FDC INT	I	Interrupt request signal input from the floppy disk drive controller (IC2101)
40	VCC	—	Power supply terminal (+5V)
41	SWAY COMPEN	I	INPUT SELECT switch (S1719) input terminal "L": VIDEO MOTION, "H": FD or VIDEO STILL
42	VSS	—	Ground terminal
43	XRD	O	Data read enable signal output terminal "L" active
44	XWDTOVF	O	Watch dog timer overflow output terminal
45	TIMER WR	O	Data write enable signal output to the timer (IC1700)
46	TIMER CE	O	Chip enable signal output to the timer (IC1700)
47	TESTO	O	Job output terminal (open)
48	XWR	O	Data write enable signal output terminal "L" active
49	XCS1	O	Chip select signal output terminal Not used
50	XCS0	O	Chip select signal output to the A/D, D/A converter (IC407)
51	FD/VIDEO SEL	I	INPUT SELECT switch (S1719) input terminal "L": FD, "H": VIDEO MOTION or VIDEO STILL
52	3.3V	O	3.3V/5V selection signal output terminal Not used (open)
53	FDC CS	O	Chip select signal output to the floppy disk drive controller (IC2101)
54	CP	O	CP signal output terminal Not used (open)

Pin No.	Pin Name	I/O	Function
55	VSS	—	Ground terminal
56	CS	O	Chip select signal output terminal Not used (open)
57	FLASH	O	Chip select signal output to the flash memory (IC506) "L" active
58	XACK	O	Acknowledge signal output terminal Not used
59	FDC DMA ACK	O	DMA acknowledge signal output to the floppy disk drive controller (IC2101)
60	STB	I	Strobe signal input terminal Not used
61	VSS	—	Ground terminal
62	IR-DRQ	—	Not used (open)
63	VCC	—	Power supply terminal (+5V)
64	MAC-HSKI	I	HSKI input terminal Not used
65	CD	I	Control signal input terminal Not used (fixed at "H")
66	IR-IRQ	I	Not used (fixed at "L")
67	VBLK	I	V blanking signal input from the A/D, D/A converter (IC407) "L" active
68	XSTB	I	Strobe signal input terminal Not used
69	$\overline{\text{RESET FDC}}$	O	Reset signal output to the floppy disk drive controller (IC2101) "L": reset
70	R/B	I	R/B select signal input terminal Not used (open)
71	VSS	—	Ground terminal
72	FDD READY OUT	O	Ready signal output to the floppy disk drive controller (IC2101) and floppy disk drive unit
73 to 76	D15 to D12	I/O	Two-way data bus with the A/D, D/A converter (IC407), mechanism controller (IC505) and D-RAM (IC509) (upper 8 bit)
77	VCC	—	Power supply terminal (+5V)
78	D11	I/O	Two-way data bus with the A/D, D/A converter (IC407), mechanism controller (IC505) and D-RAM (IC509) (upper 8 bit)
79	VSS	—	Ground terminal
80 to 82	D10 to D8	I/O	Two-way data bus with the A/D, D/A converter (IC407), mechanism controller (IC505) and D-RAM (IC509) (upper 8 bit)
83, 84	D7, D6	I/O	Two-way data bus with the A/D, D/A converter (IC407), mechanism controller (IC505), flash memory (IC506), D-RAM (IC509) and floppy disk drive controller (IC2101) (lower 8 bit)
85	VCC	—	Power supply terminal (+5V)
86	D5	I/O	Two-way data bus with the A/D, D/A converter (IC407), mechanism controller (IC505), flash memory (IC506), D-RAM (IC509) and floppy disk drive controller (IC2101) (lower 8 bit)
87	VSS	—	Ground terminal
88 to 92	D4 to D0	I/O	Two-way data bus with the A/D, D/A converter (IC407), mechanism controller (IC505), flash memory (IC506), D-RAM (IC509) and floppy disk drive controller (IC2101) (lower 8 bit)
93	VSS	—	Ground terminal
94	XTL	I	System clock input terminal (7.159 MHz)
95	MD3	I	Setting terminal for the CPU operational mode (fixed at "H" in this set)
96	EXTL	O	System clock output terminal (7.159 MHz)
97	MD2	I	Setting terminal for the CPU operational mode (fixed at "L" in this set)
98	XINIT	I	Interrupt input terminal Not used (fixed at "L")
99	VCC/FWP	O	Control signal output for the EEPROM communication bus
100	RESET/WP	O	Wakeup control signal output terminal Not used (open)
101	XWAIT	I	Wait control input from the A/D, D/A converter (IC407) "L" active
102	MD1/BOOT	I	Setting terminal for the CPU operational mode (fixed at "H" in this set)
103	MD0	I	Setting terminal for the CPU operational mode (fixed at "L" in this set)
104	PLL VCC	—	Power supply terminal (+5V) (PLL system)
105	PLL CAP	I	Connected to capacitor for the PLL
106	PLL VSS	—	Ground terminal (PLL system)

Pin No.	Pin Name	I/O	Function
107	CK	O	System clock signal output to the A/D, D/A converter (IC407) (for INT SG)
108	$\overline{\text{XRES}}$	I	System reset signal input from the reset signal generator (IC501) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
109	FDD DMA RQ	I	DMA request signal input from the floppy disk drive controller (IC2101)
110	BUZZER	O	Buzzer drive signal output terminal
111	G2	O	Not used (open)
112	VCC	—	Power supply terminal (+5V)
113	FDD DRIVE SELECT 0	O	Drive select 0 control signal output to the floppy disk drive unit
114	FDD DISK CHANGE	I	Disk change control signal input from the floppy disk drive unit
115	FDD DENSITY OUT	O	Density control signal output to the floppy disk drive unit
116	FDD MOTOR ON	O	Motor on/off control signal output to the floppy disk drive unit
117	VSS	—	Ground terminal
118	KEY0	I	Key input terminal (A/D input) S1706, 1714, 1715, 1718 (PRINT, VIDEO ▷ FD SAVE, CLOCK SET, C CLEAR ALL keys input)
119	KEY1	I	Key input terminal (A/D input) S1707, 1708, 1710 to 1713, 1717 (CAPTURE, PICTURE, ⇨, ⇦, ⇩, ⇧, ENTER keys input)
120	KEY2	I	Rotary switch (S1701) input for the function select
121	HEADTMP	I	Temperature detect input from the thermal-head (HEAD901)
122	PPEDG	I	Paper edge detection sensor (PH901) input terminal
123	JDET	I	Paper jamming detection sensor (PH1861) input terminal
124	AVSS	—	Ground terminal (for A/D converter)
125	RMARK0	I	Ribbon mark (0) detection sensor (PH902) input terminal
126	RMARK1	I	Ribbon mark (1) detection sensor (PH903) input terminal
127	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
128	AVCC	—	Power supply terminal (+5V) (for A/D converter)
129	VSS	—	Ground terminal
130	TIMER RXD	I	Serial receive data input from the timer (IC1700)
131	TIMER TXD	O	Serial transmit data output to the timer (IC1700)
132	TIMER SCK	O	Serial data transfer clock signal output to the timer (IC1700)
133	EEPROM RXD	I	Serial receive data input from the EEPROM (IC2002)
134	EEPROM TXD	O	Serial transmit data output to the EEPROM (IC2002)
135	VCC	—	Power supply terminal (+5V)
136	EEPROM SCK	O	Serial clock signal output to the EEPROM (IC2002)
137	FDC TC	O	Terminal count signal output to the floppy disk drive controller (IC2101)
138	STP1	O	Stepping pulse (1) output for the platen motor (M904)
139	STP2	O	Stepping pulse (2) output for the platen motor (M904)
140	STP3	O	Stepping pulse (3) output for the platen motor (M904)
141	VSS	—	Ground terminal
142	STP4	O	Stepping pulse (4) output for the platen motor (M904)
143	RAS-CNT	O	Selection signal output of the row address strobe signal
144	FDD READY IN	I	Ready signal input from the floppy disk drive controller (IC2101)

• **DK-39 BOARD IC505 HG51BS263AFB (HEAD CONTROLLER, MECHANISM CONTROLLER)**

Pin No.	Pin Name	I/O	Function
1	FKEY0	I	Sheets bit (0) input from the auto feeder unit
2	FEEDER	I	Auto feeder unit desorption detect input terminal "L": attach, "H": removed
3	FPS	I	Auto feeder unit position detect sensor input terminal
4	BUSY	I/O	Busy signal in/out terminal Connected to TMGE (pin ㉖)
5	HPS0	I	Head position (0) detect sensor (PH1852) input terminal
6	HPS1	I	Head position (1) detect sensor (PH1851) input terminal
7	IVO2	O	Not used (open)
8	IVO1	O	Not used (open)
9	IVI2	I	Not used (fixed at "L")
10	IVI1	I	Not used (fixed at "L")
11	IVEN	I	Not used (fixed at "L")
12	GND	—	Ground terminal
13	XIN	I	System clock input terminal (20 MHz)
14	XOUT	O	System clock output terminal (20 MHz)
15	VCC	—	Power supply terminal (+5V)
16	AC T	I	Not used (fixed at "H")
17	AC W	I	Not used (fixed at "H")
18	CALC	O	Not used (open)
19	DRVX	O	Strobe signal output to the thermal-head (HEAD901) "L": power on
20	PDT3	O	Printing data (3) output to the thermal-head (HEAD901)
21	PDT2	O	Printing data (2) output to the thermal-head (HEAD901)
22	PDT1	O	Printing data (1) output to the thermal-head (HEAD901)
23	PDT0	O	Printing data (0) output to the thermal-head (HEAD901)
24	LATX	O	Serial data latch pulse output to the thermal-head (HEAD901)
25	HDCK	O	Serial data transfer clock signal output to the thermal-head (HEAD901)
26	TMGE	I/O	Timing pulse in/out terminal Connected to BUSY (pin ④)
27	DRQX	O	Not used (open)
28	CKO	O	Clock signal output terminal (20 MHz)
29	VCC	—	Power supply terminal (+5V)
30	GND	—	Ground terminal
31	CK	I	Clock signal input terminal (20 MHz) Connected to CKO (pin ㉘)
32	DTRX	I	Not used (fixed at "L")
33	TMG	I	Timing pulse input terminal Connected to TMG (pin ㊹)
34	PSTX	I	Print start signal input terminal Connected to PSTX (pin ㊺)
35	$\overline{\text{RESX}}$	I	System reset signal input from the reset signal generator (IC501) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
36	RDX	I	Data read enable signal input from the system controller (IC503) "L" active
37	WEX	I	Data write enable signal input from the system controller (IC503) "L" active
38	VCC	—	Power supply terminal (+5V)
39	CS1X	I	Chip select signal input from the A/D, D/A converter (IC407) "L" active
40	CUTEX	I	Address signal input for the chip select signal generate Connected to address bus (A12)
41	REGX	I	Address signal input for the chip select signal generate Connected to address bus (A11)
42 to 51	AD10 to AD1	I	Address signal input from the system controller (IC503)
52	VCC	—	Power supply terminal (+5V)
53	GND	—	Ground terminal
54 to 61	DT15 to DT8	I/O	Two-way data bus with the A/D, D/A converter (IC407), system controller (IC503) and D-RAM (IC509) (upper 8 bit)

Pin No.	Pin Name	I/O	Function
62, 63	GND	—	Ground terminal
64 to 71	DT7 to DT0	I/O	Two-way data bus with the A/D, D/A converter (IC407), system controller (IC503), flash memory (IC506), D-RAM (IC509) and floppy disk drive controller (IC2101) (lower 8 bit)
72	GND	—	Ground terminal
73	VCC	—	Power supply terminal (+5V)
74	RIBBON-LED	O	LED drive signal output of the ribbon error indicator (D1735) "L": LED on
75	INP-LED	O	LED drive signal output of the INPUT indicator (D1733) "L": LED on
76	MEM-LED	O	LED drive signal output of the MEMORY indicator (D1734) "L": LED on
77	PRN-LED	O	LED drive signal output of the printing status indicator (D1737 to D1739) "H": LED on
78	CARD-LED	O	LED drive signal output terminal "L": LED on Not used (open)
79	PAPER-LED	O	LED drive signal output of the paper replacement indicator (D1736) "L": LED on
80	POWER-LED	O	LED drive signal output of the POWER indicator (D1731) "L": LED on
81	STPLOW	O	Low/high speed control signal output for the platen motor (M904)
82	DATE (PWSW)	I	DATE switch (S1720) input terminal "L": on, "H": off
83	FAN	O	Head fan motor (M901) drive signal output terminal "H": motor on
84	FMTRCW	O	Motor drive signal (CW) output for the auto feeder unit "H" active
85	FMTRCCW	O	Motor drive signal (CCW) output for the auto feeder unit "H" active
86	HMTRCW	O	Head up/down motor (M902) drive signal (CW) output terminal "H" active
87	HMTRCCW	O	Head up/down motor (M902) drive signal (CCW) output terminal "H" active
88	VCC	—	Power supply terminal (+5V)
89	RMTRCW	O	Ribbon motor (M903) drive signal (CW) output terminal "H" active
90	RMTRCCW	O	Ribbon motor (M903) drive signal (CCW) output terminal "H" active
91	PC	I	PRESET SELECT switch (S1702) input terminal "L": PC, "H": MAVICA or off
92	MAVICA PRINT	I	PRESET SELECT switch (S1702) input terminal "L": MAVICA, "H": PC or off
93	VMUTE	—	Not used (open)
94	TMG	O	Timing pulse output terminal Connected to TMG (pin ㉝)
95	PSTX	O	Print start signal output terminal Connected to PSTX (pin ㉞)
96	RCODE2	I	Ribbon code (2) detect sensor (PH904) input terminal
97	RCODE1	I	Ribbon code (1) detect sensor (PH905) input terminal
98	RCODE0	I	Ribbon code (0) detect sensor (PH906) input terminal
99	FKEY2	I	Sheets bit (2) input from the auto feeder unit
100	FKEY1	I	Sheets bit (1) input from the auto feeder unit

• **DK-39 BOARD IC2101 μPD72069GF-3BA (FLOPPY DISK DRIVE CONTROLLER)**

Pin No.	Pin Name	I/O	Function
1	NC	—	Not used (open)
2	GND3	—	Ground terminal (buffer system)
3	NC	—	Not used (open)
4	EM2	O	Spindle motor on/off control signal output of the drive unit Not used (open)
5	EM1	O	Spindle motor on/off control signal output of the drive unit Not used (open)
6	GND3	—	Ground terminal (buffer system)
7	EM0	O	Spindle motor on/off control signal output of the drive unit Not used (open)
8	DIR	O	Signal specifying the seek direction is output to the floppy disk drive unit "L": centripetal direction, "H": centrifugal direction
9	GND3	—	Ground terminal (buffer system)
10	STEP	O	Signal generating seek pulses is output to the floppy disk drive unit
11	WDATA	O	Written data output to the floppy disk drive unit
12	GND3	—	Ground terminal (buffer system)
13	WE	O	Signal specifying data writing to drive is output to the floppy disk drive unit
14	ENIDX	I	Signal that makes INDEX signal and RDATA signal active is input from the floppy disk drive unit Fixed at "L" in this set
15	NC	—	Not used (open)
16	VDD2	—	Power supply terminal (+5V) (analog system)
17	NC	—	Not used (open)
18	CGP1	O	Phase error in sub PLL system is output
19	NC	—	Not used (open)
20	CGP2	O	Phase error in sub PLL system is output
21	GND2	—	Ground terminal (analog system)
22	LPF1	O	Phase error in main PLL system is output
23	LPF2	O	Phase error in main PLL system is output
24	TRK0	I	Signal showing that the head of drive positions at cylinder 0 is input from the floppy disk drive unit
25	NC	—	Not used (open)
26	WPRT	I	Signal showing that the medium is in write protect status is input from the floppy disk drive unit
27	RDATA	I	Read data input from the floppy disk drive unit
28, 29	NC	—	Not used (open)
30	READY	I	Signal showing that the drive is ready is input from the floppy disk drive unit
31	2SIDE	I	Signal showing that a both sided medium is inserted in the drive is input Not used (fixed at "L")
32	FLT	I	Signal showing that the drive is in fault status is input Not used (fixed at "H")
33	ENPCS	I	Not used (fixed at "L")
34	ACTL	I	Initial setting signal to select active level of drive interface signal is input Fixed at "H" in this set (Set the active level is "L")
35	MSEL	I	Not used (fixed at "L")
36	SIDE	O	Signal selecting the head of both sided drive is output to the floppy disk drive unit
37	GND3	—	Ground terminal (buffer system)
38	FLTR	O	Signal to reset the drive fault status is output Not used (open)
39	HDLD	O	Signal setting the head of drive in load status is output Not used (open)
40	GND3	—	Ground terminal (buffer system)
41	LCT	O	Signal showing that the head of drive positions at the inside from No. 43 cylinder is output Not used (open)
42, 43	VDD1	—	Power supply terminal (+5V) (digital system)

Pin No.	Pin Name	I/O	Function
44	NC	—	Not used (open)
45	$\overline{\text{RESET}}$	I	Reset signal input from the system controller (IC503) "L": reset
46	$\overline{\text{RD}}$	I	Data read strobe signal input from the system controller (IC503)
47	$\overline{\text{WR}}$	I	Data write strobe signal input from the system controller (IC503)
48	$\overline{\text{ENRW}}$	I	Not used (open)
49	RSEL	I	Not used (open)
50	$\overline{\text{CS}}$	I	Chip select signal input from the system controller (IC503) Signal that makes RD, WR signals of FDC active is input
51	A0	I	Address signal input from the system controller (IC503)
52 to 54	NC	—	Not used (open)
55, 56	GND1	—	Ground terminal (digital system)
57 to 60	D0 to D3	I/O	Two-way data bus with the A/D, D/A converter (IC403), system controller (IC503), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
61	GND3	—	Ground terminal (buffer system)
62, 63	D4, D5	I/O	Two-way data bus with the A/D, D/A converter (IC403), system controller (IC503), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
64	NC	—	Not used (open)
65	D6	I/O	Two-way data bus with the A/D, D/A converter (IC403), system controller (IC503), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
66	NC	—	Not used (open)
67	D7	I/O	Two-way data bus with the A/D, D/A converter (IC403), system controller (IC503), mechanism controller (IC505), flash memory (IC506) and D-RAM (IC509)
68	DMARQ	O	Data transfer request signal in DMA mode is output to the system controller (IC503)
69	$\overline{\text{DMAAK}}$	I	Data register select signal in DMA cycle is input from the system controller (IC503)
70	TC	I	Signal showing the completion of data transfer to a floppy disk is input from the system controller (IC503) (Active when final byte of data is transferred)
71	INT	O	Signal notifying that a cause of interruption occurred in host system is output to the system controller (IC503)
72	FMT	I	Not used (fixed at "L")
73	DR0	I	Not used (fixed at "L")
74	DR1	I	Not used (fixed at "L")
75	DR2	I	Not used (fixed at "H")
76	INDEX	I	Signal showing that the head of drive positions at physical start point of tracks on a medium is input from the floppy disk drive unit
77	NC	—	Not used (open)
78	PCS0	I	Not used (fixed at "H")
79	NC	—	Not used (open)
80	PCS1	I	Not used (fixed at "L")
81	GND3	—	Ground terminal (buffer system)
82	XA1	I	Main system clock input terminal (16 MHz)
83	XA2	O	Main system clock output terminal (16MHz)
84	NC	—	Not used (open)
85	GND1	—	Ground terminal (digital system)
86	XB1	I	Clock input terminal
87	XB2	O	Clock output terminal Not used (open)
88	NC	—	Not used (open)
89, 90	GND1	—	Ground terminal (digital system)
91	DEN0	O	Value corresponding to the set data transfer rate is output Not used (open)
92	GND3	—	Ground terminal (buffer system)

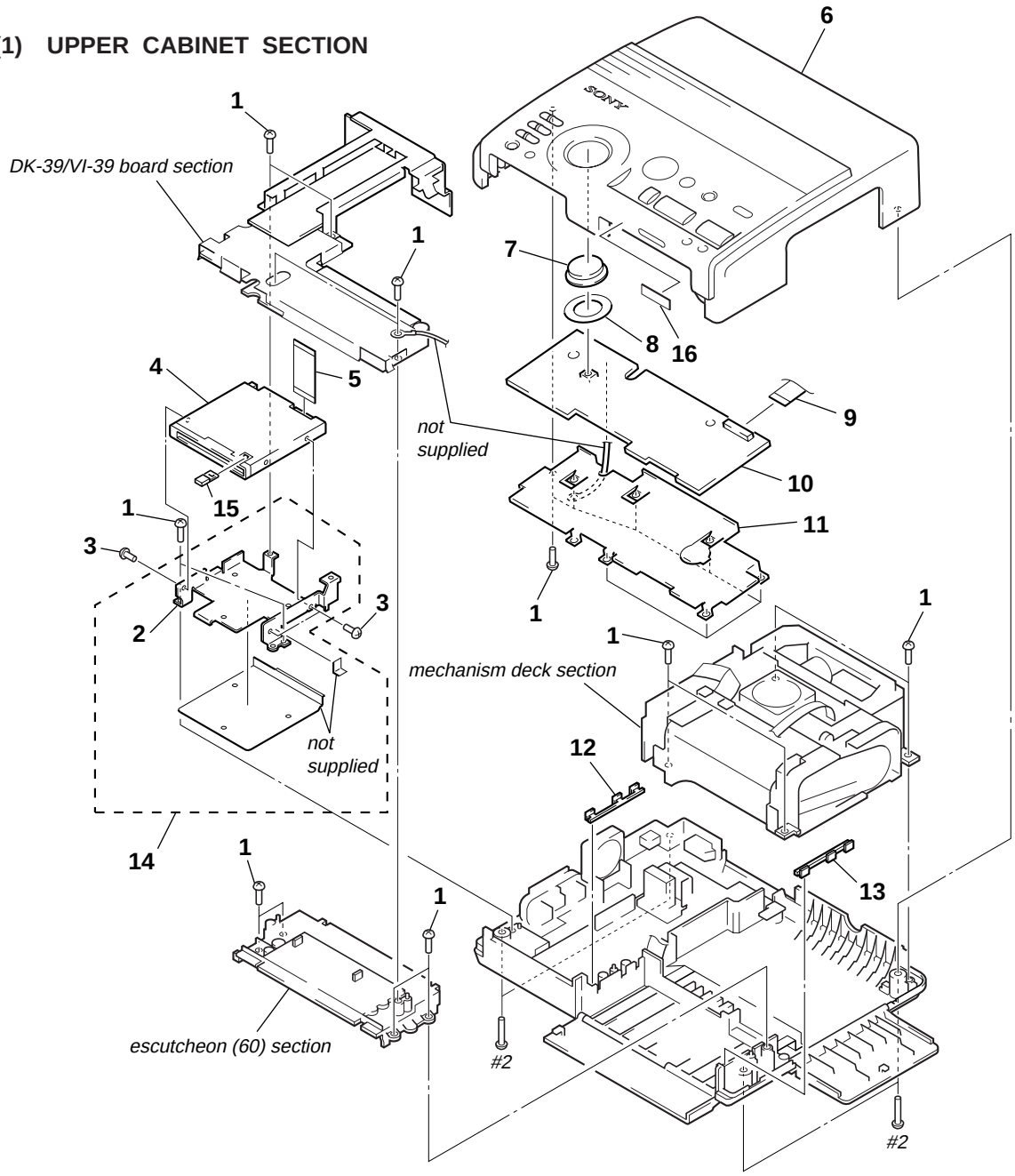
Pin No.	Pin Name	I/O	Function
93	DEN1	O	Value corresponding to the set data transfer rate is output Not used (open)
94	DS3	O	Drive select signal is output Not used (open)
95	GND3	—	Ground terminal (buffer system)
96	DS1	O	Drive select signal is output Not used (open)
97	DS2	O	Drive select signal is output Not used (open)
98	GND3	—	Ground terminal (buffer system)
99	DS0	O	Drive select signal is output Not used (open)
100	EM3	O	Spindle motor on/off control signal output of the drive unit Not used (open)

SECTION 6
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

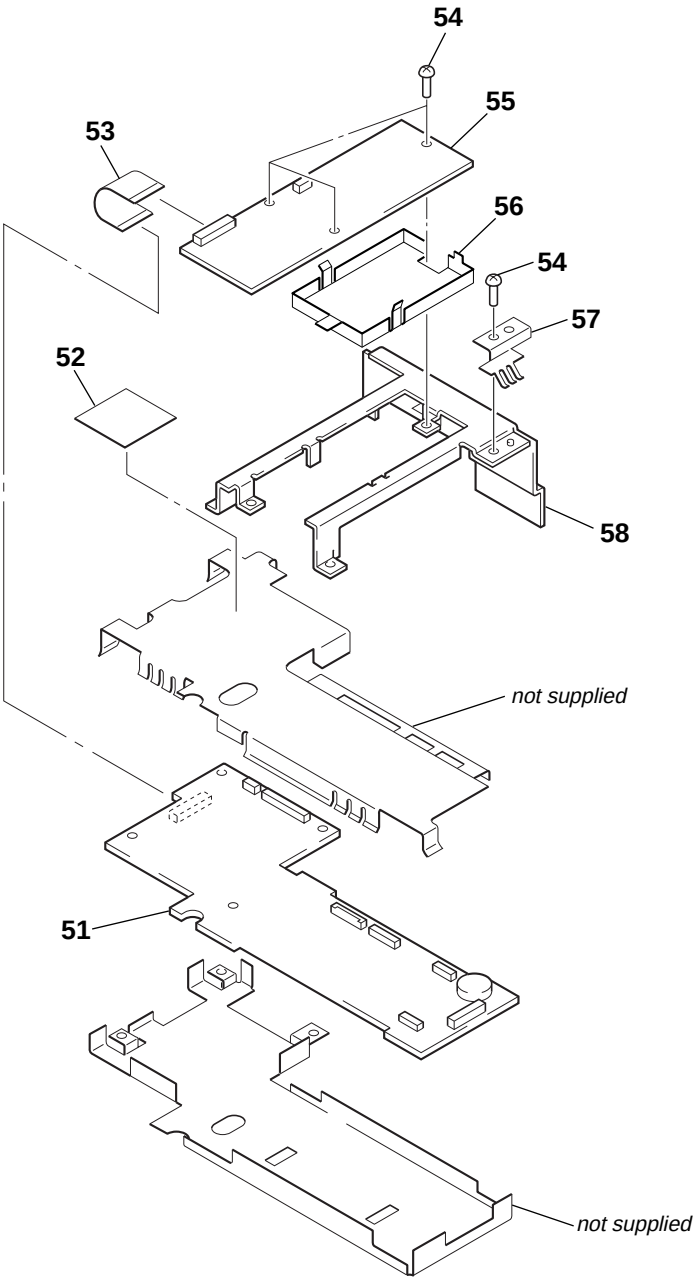
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) UPPER CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-946-346-01	SCREW (+BV) (2.6X8), TAPPING	
* 2	4-639-927-01	BRACKET, FD	
3	3-719-381-31	SCREW (M2X3)	
4	1-759-644-21	DRIVE, FLOPPY DISK (3.5inch)	
5	1-790-360-11	CABLE, FLAT (DKFD39)	
6	X-4621-929-1	CABINET ASSY, UPPER	
7	4-639-920-01	DIAL	
8	4-639-919-01	HOLDER, DIAL	
9	1-790-361-11	CABLE, FLAT (DKSW39)	
10	A-8054-962-A	SW-39 BOARD, COMPLETE	
* 11	4-639-921-01	REINFORCEMENT, BUTTON	
12	3-971-519-01	RAIL (L), FEEDER	
13	3-971-530-01	RAIL (R), FEEDER	
* 14	X-4622-018-1	BRACKET ASSY, FD	
15	4-640-196-01	BUTTON, FD EJECT	
16	4-641-116-01	LABEL (E)	

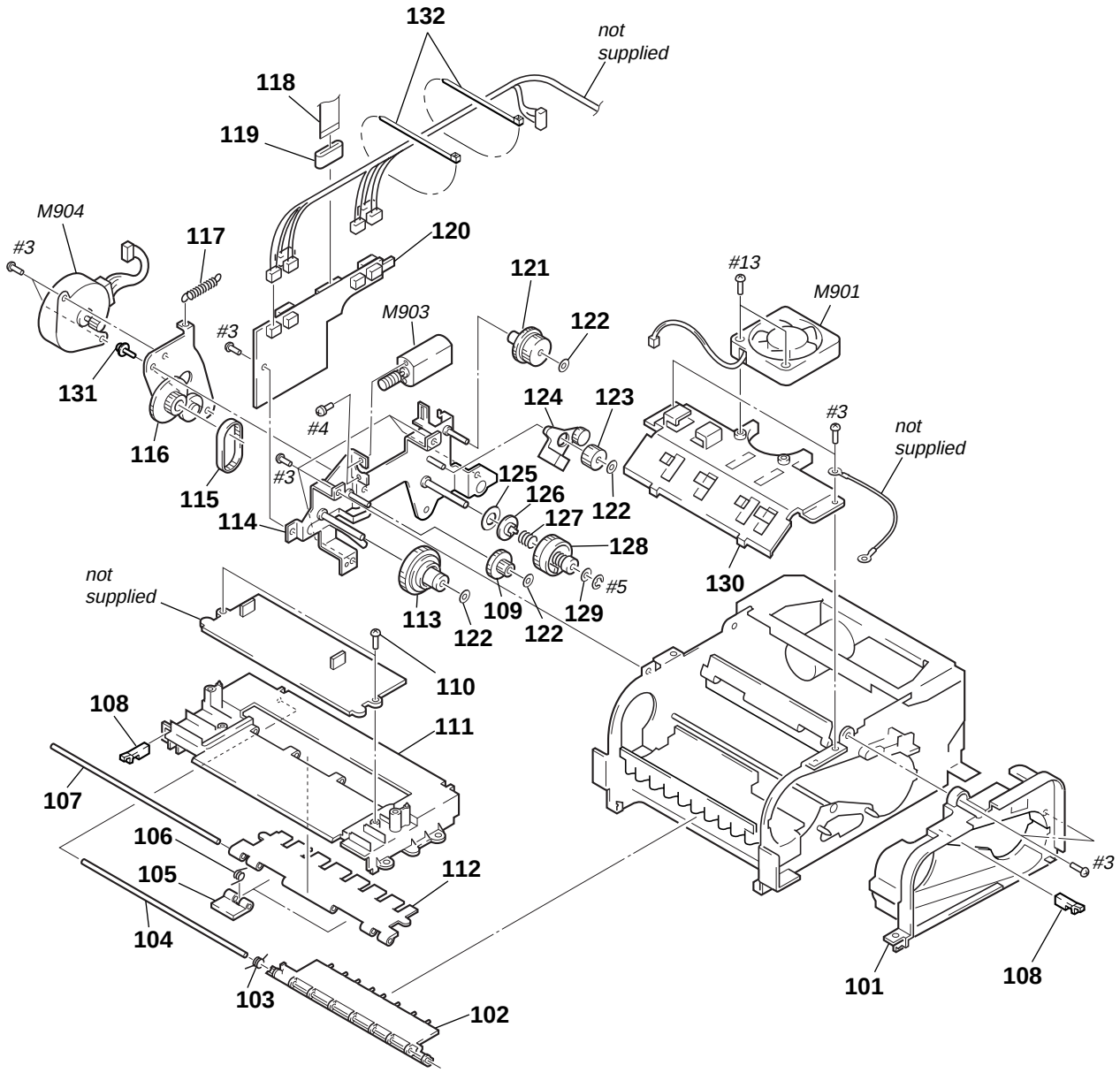
(2) DK-39/VI-39 BOARD SECTION



Ref. No.	Part No.	Description	Remark
51	A-8054-969-A	DK-39 BOARD, COMPLETE	
* 52	4-639-317-01	INSULATED PLATE, VI	
53	1-783-919-11	CABLE, FLAT (VIDK20)	
54	3-946-346-01	SCREW (+BV) (2.6X8), TAPPING	

Ref. No.	Part No.	Description	Remark
55	A-8054-971-A	VI-39 BOARD, COMPLETE	
* 56	4-639-184-01	SHIELD, VI	
* 57	4-638-736-01	SPRING, JACK GROUND	
* 58	4-639-930-01	BRACKET, JK	

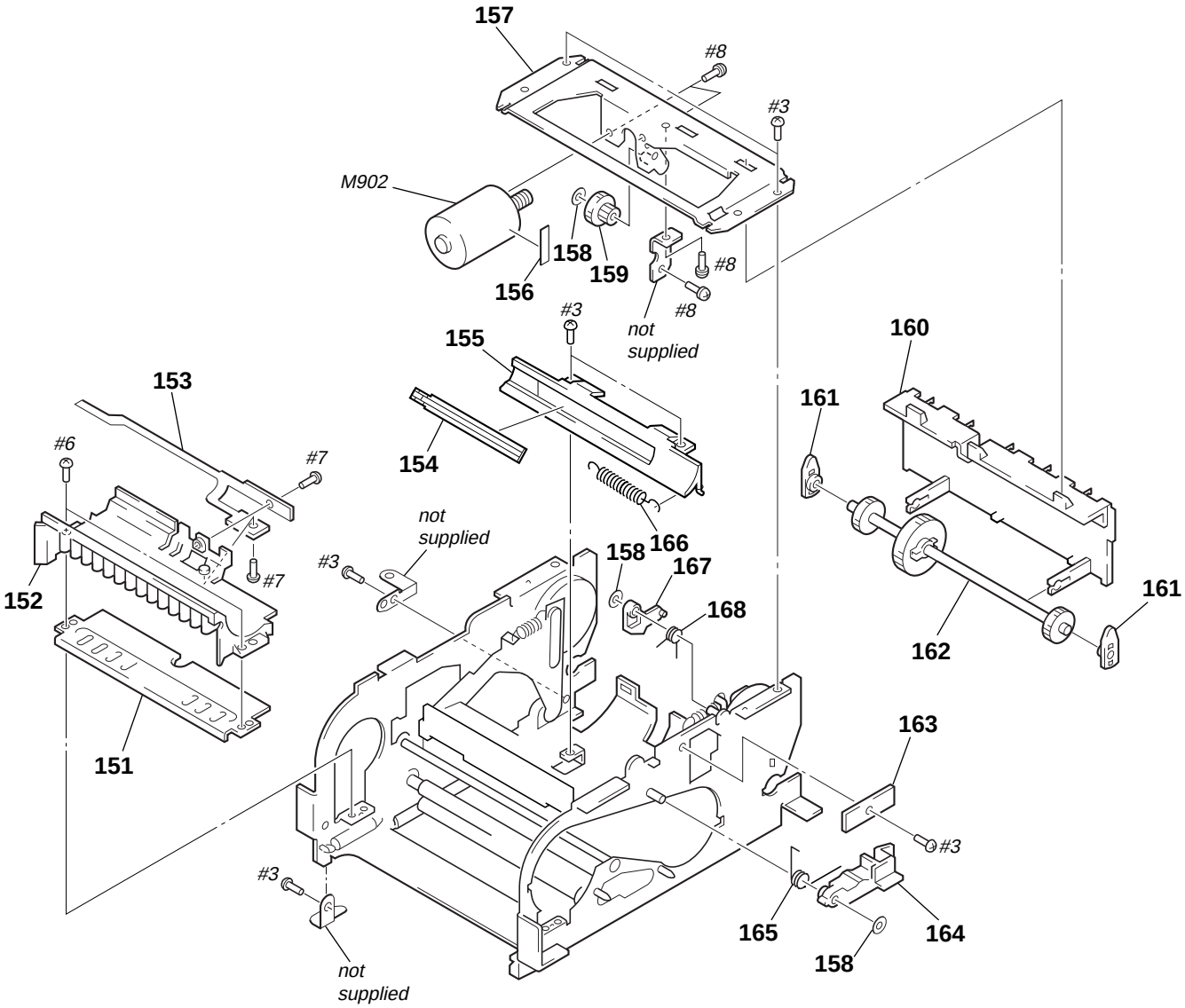
(3) MECHANISM DECK SECTION-1



Ref. No.	Part No.	Description	Remark
101	4-639-928-01	GUIDE, CASSETTE ENTRANCE	
102	3-971-511-04	GUIDE, PAPER	
103	3-971-507-02	SPRING, PAPER GUIDE	
104	3-971-505-01	SHAFT (D)	
105	3-971-504-03	RETAINER, PAPER	
106	3-971-508-01	SPRING, SEPARETION GUIDE	
107	3-971-506-01	SHAFT (E)	
108	4-995-081-01	LATCH, DC	
109	3-971-435-01	WHEEL, WORM	
110	3-945-884-01	SCREW (2X5)	
111	3-971-509-41	ESCUTCHEON (A)	
112	3-971-503-03	GUIDE, SEPARETION	
113	A-7093-413-A	REEL BLOCK ASSY, T	
* 114	X-3946-402-2	BRACKET ASSY, MOTOR	
115	3-971-501-01	BELT, TN	
* 116	A-7092-969-A	PLATE BLOCK ASSY, SP MOTOR	
117	3-971-460-01	SPRING (PM), TENSION	
118	1-661-552-11	FP-700 FLEXIBLE BOARD	

Ref. No.	Part No.	Description	Remark
119	1-543-936-11	CORE (FPC)	
120	A-8054-958-A	MD-39 BOARD, COMPLETE	
121	3-971-439-02	GEAR, LIMITTER	
122	4-926-219-02	RING (DIA. 2.3), RETAINING	
123	3-973-467-02	GEAR (A), PENDULUM	
124	A-7018-291-B	ARM BLOCK ASSY, PENDULUM	
125	3-973-516-01	FELT, R	
126	3-973-470-01	SLEEVE	
127	3-973-515-01	SPRING (S TENSION), COMPRESSION	
128	A-7018-290-B	REEL BLOCK ASSY, S	
129	3-701-439-21	WASHER	
* 130	3-050-965-03	HOLDER, FAN	
131	3-951-872-01	SCREW (2.6X6)	
132	3-671-893-01	CLAMP (LOW TYPE)	
M901	1-763-018-21	FAN, DC (HEAD FAN)	
* M903	A-7092-966-A	MOTOR BLOCK ASSY, REEL (RIBBON)	
M904	1-698-790-11	MOTOR, DC (STEPPING MOTOR) (PLATEN)	

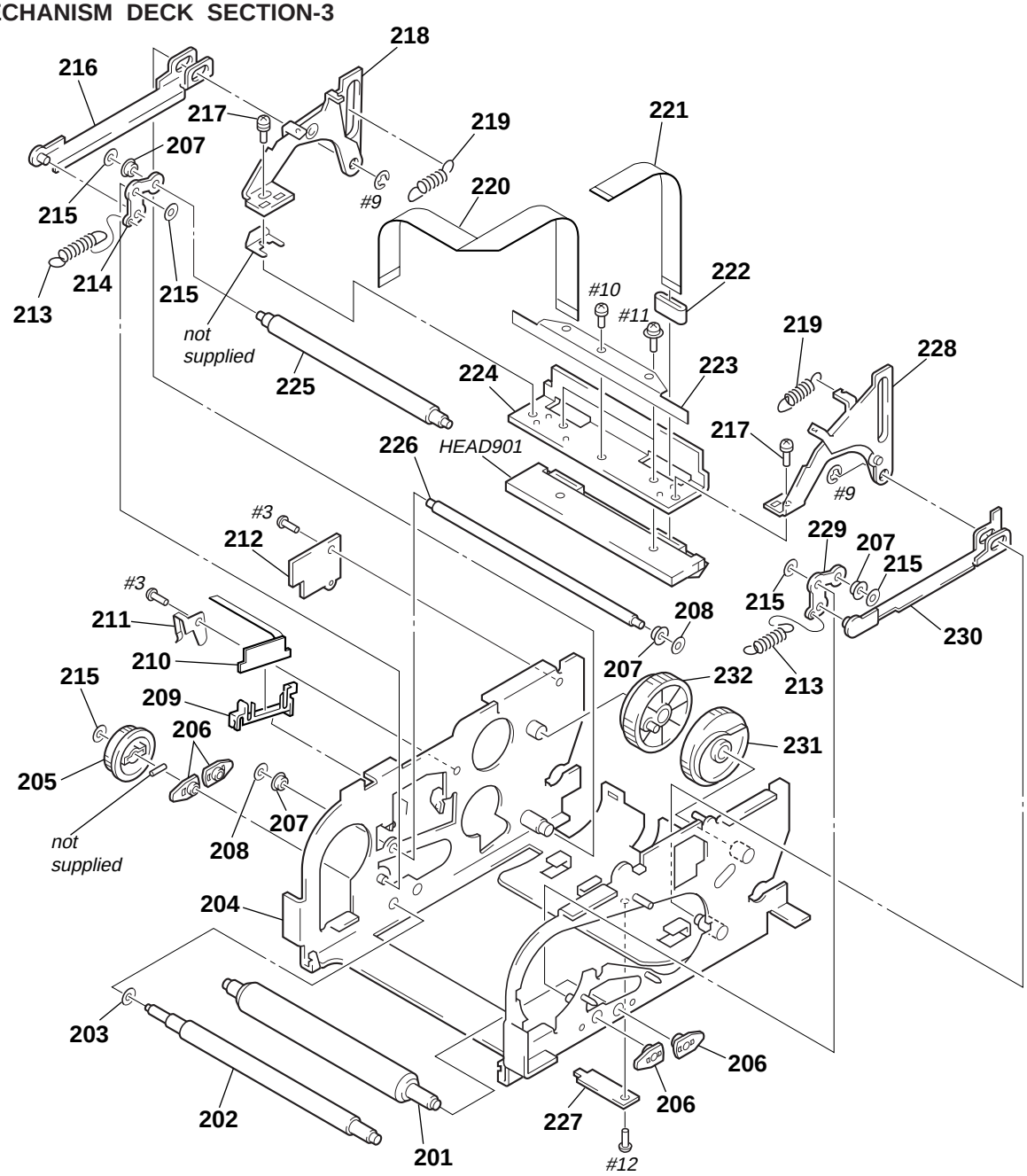
(4) MECHANISM DECK SECTION-2



Ref. No.	Part No.	Description	Remark
151	3-971-488-02	GUIDE, PAPER	
152	3-971-484-04	GUIDE (T), CASSETTE	
153	1-661-553-11	FP-703 FLEXIBLE BOARD	
154	3-971-499-01	LEVER, EJECT	
155	3-971-498-01	GUIDE (S), CASSETTE	
156	3-847-537-11	CUSHION (5)	
* 157	X-3946-408-3	BRACKET ASSY, HM	
158	4-926-219-02	RING (DIA. 2.3), RETAINING	
159	3-971-474-01	GEAR (A), HEAD DRIVE	
160	3-971-513-03	COVER, REAR	

Ref. No.	Part No.	Description	Remark
161	3-971-471-01	BEARING, ROLLER	
162	A-7092-963-C	GEAR BLOCK ASSY, HEAD DRIVING	
163	A-8054-960-A	RD-39 BOARD, COMPLETE	
164	3-971-486-01	LOCK, CASSETTE	
165	3-971-487-02	LOCK (SP), CASSETTE	
166	3-971-500-01	SPRING (EJ), TENSION	
167	3-971-497-01	ARM, C LOCK FIXED	
168	3-971-492-01	ARM (SP), C LOCK	
* M902	A-7092-967-A	MOTOR BLOCK ASSY, HEAD	(HEAD UP/DOWN)

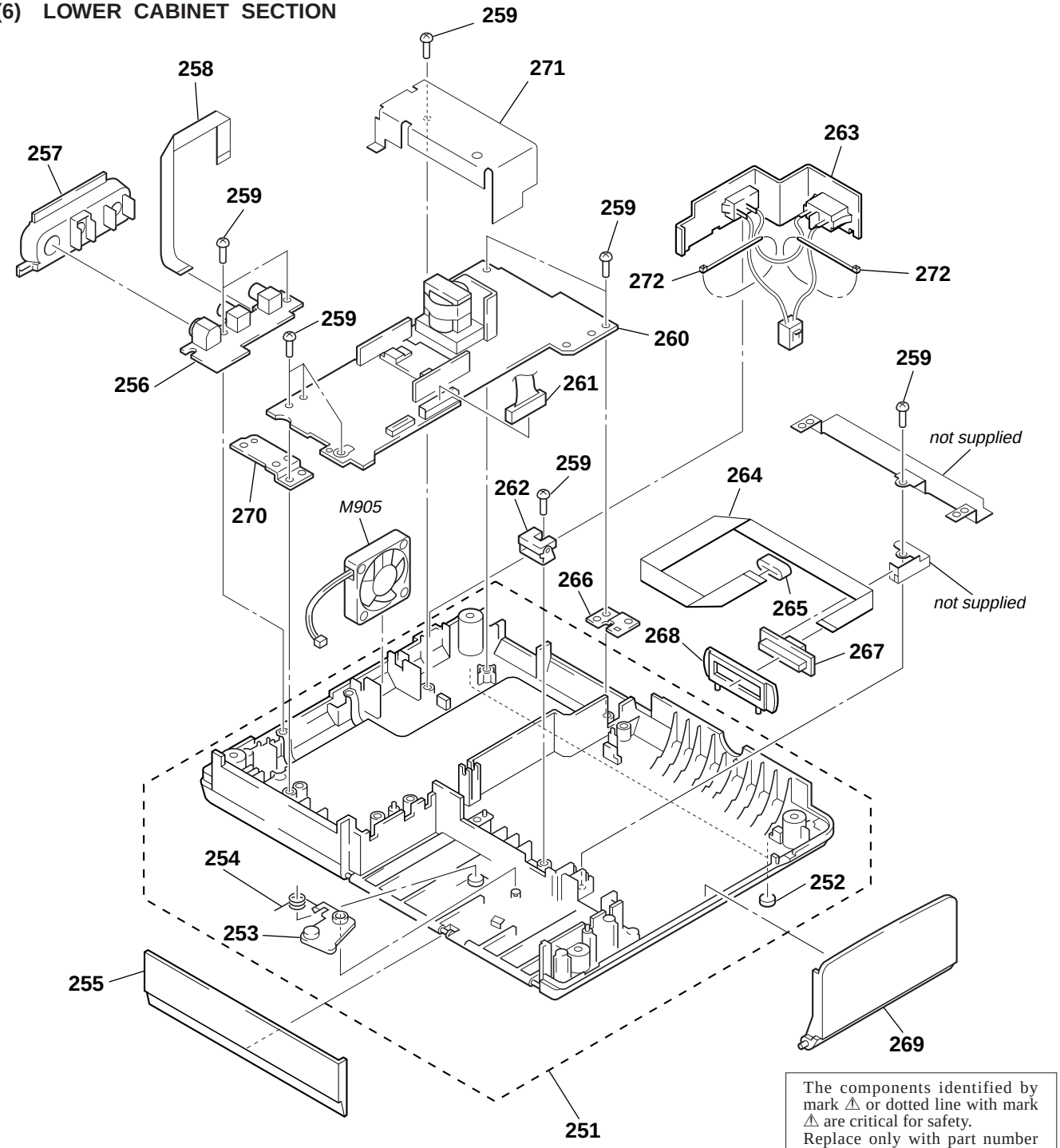
(5) MECHANISM DECK SECTION-3



Ref. No.	Part No.	Description	Remark
201	3-971-466-01	ROLLER, PLATEN	
202	3-971-465-12	ROLLER, CAPSTAN	
203	3-701-441-11	WASHER	
* 204	X-3946-399-6	CHASSIS ASSY, MECHANICAL	
205	3-971-468-01	GEAR, CAPSTAN	
206	3-971-471-01	BEARING, ROLLER	
207	3-971-502-01	BEARING, PINCH ROLLER	
208	3-312-434-01	WASHER, SLIT	
209	3-971-496-01	HOLDER, SENSOR	
210	1-661-554-11	FP-702 FLEXIBLE BOARD	
211	3-971-495-01	SPRING, LEAF	
212	A-8054-961-A	HP-39 BOARD, COMPLETE	
213	3-971-472-01	SPRING (PINCH ROLLER), TENSION	
214	3-971-489-02	ARM (L), PINCH ROLLER	
215	4-926-219-02	RING (DIA. 2.3), RETAINING	
* 216	X-3946-412-2	ARM (L) ASSY, RELEASE	
217	3-669-607-11	+PSW (SMALL ROUND) (2.6)	

Ref. No.	Part No.	Description	Remark
* 218	X-3946-401-1	ARM (L) ASSY, HEAD	
219	3-971-424-01	SPRING (HEAD), TENSION	
220	1-783-926-11	CABLE, FLAT (POHE13)	
221	1-783-924-11	CABLE, FLAT (ADHE13)	
222	1-500-204-11	CORE, FERRITE	
223	3-971-494-02	GUIDE, RIBBON	
224	3-971-493-02	HEAT SINK	
225	3-971-464-02	PINCH ROLLER	
226	3-971-483-02	ROLLER, GUIDE	
227	A-8054-959-A	JD-39 BOARD, COMPLETE	
* 228	X-3946-400-1	ARM (R) ASSY, HEAD	
229	3-971-490-02	ARM (R), PINCH ROLLER	
* 230	X-3946-411-2	ARM (R) ASSY, RELEASE	
* 231	X-3946-406-1	GEAR (R) ASSY, POWER	
* 232	X-3946-407-1	GEAR (L) ASSY, POWER	
	HEAD9011-500-568-11	HEAD, THERMAL	

(6) LOWER CABINET SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
251	X-4621-930-1	CABINET ASSY, LOWER	
252	4-047-474-01	FOOT, RUBBER	
253	3-971-517-01	ARM, FEEDER LOCK	
254	3-971-518-01	SPRING, FEEDER LOCK	
255	X-4621-931-1	DOOR ASSY, FRONT	
256	A-8054-967-A	VS-39 BOARD, COMPLETE	
257	4-639-931-01	COVER, VS	
258	1-790-362-11	CABLE, FLAT (VIVS39)	
259	3-946-346-01	SCREW (+BV) (2.6X8), TAPPING	
⚠260	1-468-364-11	POWER BLOCK (POWER, SWITCHING)	
261	1-956-199-11	HARNESS (PS-33)	
* 262	A-7093-373-D	LEVER BLOCK ASSY, SEPARETION	
⚠263	1-468-249-32	SWITCH BLOCK, POWER	
264	1-783-925-12	CABLE, FLAT (ADFE13)	
265	1-543-936-11	CORE (FPC)	
266	3-971-643-01	PLATE, GROUND	
267	A-8054-968-A	FE-39 BOARD, COMPLETE	
268	3-971-529-02	HOLDER, FE	
269	4-639-923-01	DOOR, RIBBON	
* 270	4-640-197-01	PLATE, FD GROUND	
* 271	4-640-658-01	DUCT (REAR)	
272	3-671-893-01	CLAMP (LOW TYPE)	
M905	1-763-018-21	FAN, DC (POWER FAN)	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-8054-969-A	DK-39 BOARD, COMPLETE			
		**********			
		< BUZZER >			
BZ201	1-529-080-11	BUZZER, PIEZOELECTRIC			
		< CAPACITOR >			
C001	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C002	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C005	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C400	1-126-206-21	ELECT CHIP	100uF	20%	6.3V
C401	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C402	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C403	1-162-928-91	CERAMIC CHIP	120PF	5%	50V
C404	1-164-315-91	CERAMIC CHIP	470PF	5%	50V
C405	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C406	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C407	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C408	1-126-206-21	ELECT CHIP	100uF	20%	6.3V
C409	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C410	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C411	1-126-193-21	ELECT CHIP	1uF	20%	50V
C412	1-162-927-91	CERAMIC CHIP	100PF	5%	50V
C413	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C414	1-162-968-91	CERAMIC CHIP	0.0047uF	10%	50V
C415	1-162-927-91	CERAMIC CHIP	100PF	5%	50V
C416	1-162-927-91	CERAMIC CHIP	100PF	5%	50V
C417	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C418	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C419	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C420	1-135-150-91	TANTAL. CHIP	3.3uF	20%	6.3V
C421	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C422	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C423	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C424	1-162-967-91	CERAMIC CHIP	0.0033uF	10%	50V
C425	1-164-237-91	CERAMIC CHIP	16PF	5%	50V
C426	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C427	1-164-816-91	CERAMIC CHIP	220PF	2%	50V
C428	1-115-414-91	CERAMIC CHIP	820PF	5%	25V
C429	1-164-378-91	CERAMIC CHIP	30PF	5%	50V
C431	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C432	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C433	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C434	1-164-505-91	CERAMIC CHIP	2.2uF		16V
C435	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C436	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C437	1-126-206-21	ELECT CHIP	100uF	20%	6.3V
C438	1-126-206-21	ELECT CHIP	100uF	20%	6.3V
C439	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C440	1-164-346-91	CERAMIC CHIP	1uF		16V
C441	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C442	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C443	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C444	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C445	1-164-346-91	CERAMIC CHIP	1uF		16V
C446	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C447	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C448	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C449	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C450	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C451	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C452	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C453	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C455	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C456	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C457	1-165-128-91	CERAMIC CHIP	0.22uF		16V
C460	1-162-966-91	CERAMIC CHIP	0.0022uF	10%	50V
C461	1-124-779-21	ELECT CHIP	10uF	20%	16V
C462	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C463	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C464	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C466	1-164-346-91	CERAMIC CHIP	1uF		16V
C468	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C469	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C470	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C471	1-126-205-21	ELECT CHIP	47uF	20%	6.3V
C472	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C473	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C474	1-104-913-91	TANTALUM CHIP	10uF	20%	16V
C500	1-162-923-91	CERAMIC CHIP	47PF	5%	50V
C501	1-115-156-91	CERAMIC CHIP	1uF		10V
C503	1-124-779-21	ELECT CHIP	10uF	20%	16V
C505	1-115-156-91	CERAMIC CHIP	1uF		10V
C507	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C508	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C511	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C512	1-115-156-91	CERAMIC CHIP	1uF		10V

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Ref. No.	Part No.	Description			Remark
C513	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C514	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C515	1-115-156-91	CERAMIC CHIP	1uF		10V
C516	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C517	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C518	1-115-156-91	CERAMIC CHIP	1uF		10V
C520	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C522	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C523	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C524	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C525	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C526	1-104-913-91	TANTALUM CHIP	10uF	20%	16V
C531	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C534	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C536	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C543	1-162-964-91	CERAMIC CHIP	0.001uF	10%	50V
C544	1-162-966-91	CERAMIC CHIP	0.0022uF	10%	50V
C545	1-162-966-91	CERAMIC CHIP	0.0022uF	10%	50V
C546	1-124-779-21	ELECT CHIP	10uF	20%	16V
C548	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C549	1-164-160-91	CERAMIC CHIP	20PF	5%	50V
C553	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C554	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C555	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C556	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C560	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C561	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C562	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C563	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C564	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C566	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C576	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C604	1-164-315-91	CERAMIC CHIP	470PF	5%	50V
C605	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C721	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C722	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C723	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2000	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2001	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2002	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C2003	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2100	1-124-779-21	ELECT CHIP	10uF	20%	16V
C2120	1-162-969-91	CERAMIC CHIP	0.0068uF	10%	25V
C2121	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C2122	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C2123	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2124	1-110-563-91	CERAMIC CHIP	0.068uF	10%	16V
C2126	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2128	1-124-779-21	ELECT CHIP	10uF	20%	16V
C2129	1-162-916-91	CERAMIC CHIP	12PF	5%	50V
C2130	1-162-916-91	CERAMIC CHIP	12PF	5%	50V
C2131	1-126-391-21	ELECT CHIP	47uF	20%	6.3V
C2132	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2133	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C2134	1-124-779-21	ELECT CHIP	10uF	20%	16V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN401	1-770-703-11	CONNECTOR, FFC/FPC 20P	
* CN402	1-580-055-41	PIN, CONNECTOR 2P	
CN501	1-778-544-21	CONNECTOR, FFC/FPC (ZIF) 30P	
CN502	1-778-622-21	CONNECTOR, FFC/FPC 10P	
CN503	1-785-468-11	CONNECTOR, FFC/FPC 13P	
CN504	1-774-287-11	CONNECTOR, FFC/FPC 22P	
* CN551	1-691-551-21	PIN, CONNECTOR (SMD) 8P	
CN2100	1-784-225-11	CONNECTOR, FFC/FPC 26P	
		< TRIMMER >	
CT401	1-141-367-51	CAP, CHIP TRIMMER 20PF	
CT500	1-141-368-51	CAP, CHIP TRIMMER 30PF	
		< DIODE >	
D400	8-719-067-40	DIODE STZ6.8N-T146	
D401	8-719-060-48	DIODE RB751V-40TE-17	
D402	8-713-101-94	DIODE 1T363A-M20-T8A	
D513	8-719-988-61	DIODE 1SS355TE-17	
D601	8-719-066-17	DIODE FTZ6.8E-T148	
D603	8-719-066-17	DIODE FTZ6.8E-T148	
D604	8-719-066-17	DIODE FTZ6.8E-T148	
D696	8-719-941-84	DIODE DA204UT106	
D697	8-719-941-84	DIODE DA204UT106	
D2000	8-719-941-84	DIODE DA204UT106	
D2100	8-719-941-21	DIODE DAP202UT106	
		< COIL/RESISTOR >	
FB351	1-414-595-21	INDUCTOR CHIP 0uH	
FB352	1-414-595-21	INDUCTOR CHIP 0uH	
FB353	1-414-595-21	INDUCTOR CHIP 0uH	
FB406	1-500-238-22	FERRITE 0uH	
FB407	1-500-288-21	FERRITE 0uH	
* FB408	1-543-959-22	FERRITE 0uH	
FB409	1-500-245-22	FERRITE 0uH	
FB410	1-500-245-22	FERRITE 0uH	
FB414	1-500-245-22	FERRITE 0uH	
FB415	1-500-245-22	FERRITE 0uH	
FB500	1-414-595-21	INDUCTOR CHIP 0uH	
FB501	1-500-288-21	FERRITE 0uH	
FB502	1-500-238-22	FERRITE 0uH	
FB504	1-500-288-21	FERRITE 0uH	
FB505	1-500-238-22	FERRITE 0uH	
FB506	1-500-288-21	FERRITE 0uH	
FB507	1-500-238-22	FERRITE 0uH	
FB508	1-500-238-22	FERRITE 0uH	
FB509	1-500-238-22	FERRITE 0uH	
FB510	1-500-238-22	FERRITE 0uH	
FB511	1-500-238-22	FERRITE 0uH	
FB512	1-500-238-22	FERRITE 0uH	
FB513	1-500-238-22	FERRITE 0uH	
FB514	1-500-238-22	FERRITE 0uH	
FB515	1-500-238-22	FERRITE 0uH	
FB516	1-500-238-22	FERRITE 0uH	
FB517	1-500-238-22	FERRITE 0uH	
FB518	1-500-238-22	FERRITE 0uH	
FB519	1-500-238-22	FERRITE 0uH	

Ref. No.	Part No.	Description	Remark
FB520	1-500-238-22	FERRITE 0uH	
FB521	1-500-238-22	FERRITE 0uH	
FB523	1-500-238-22	FERRITE 0uH	
FB524	1-500-238-22	FERRITE 0uH	
FB525	1-500-238-22	FERRITE 0uH	
FB532	1-500-238-22	FERRITE 0uH	
FB533	1-500-238-22	FERRITE 0uH	
FB534	1-500-238-22	FERRITE 0uH	
FB535	1-500-238-22	FERRITE 0uH	
FB536	1-500-238-22	FERRITE 0uH	
FB537	1-500-238-22	FERRITE 0uH	
FB538	1-500-238-22	FERRITE 0uH	
FB539	1-500-238-22	FERRITE 0uH	
FB540	1-500-238-22	FERRITE 0uH	
FB541	1-500-238-22	FERRITE 0uH	
FB542	1-500-238-22	FERRITE 0uH	
FB543	1-500-238-22	FERRITE 0uH	
FB545	1-500-288-21	FERRITE 0uH	
FB555	1-500-242-22	FERRITE 0uH	
FB556	1-500-242-22	FERRITE 0uH	
FB561	1-500-242-22	FERRITE 0uH	
FB562	1-500-242-22	FERRITE 0uH	
FB563	1-500-242-22	FERRITE 0uH	
FB565	1-500-242-22	FERRITE 0uH	
FB566	1-500-242-22	FERRITE 0uH	
FB576	1-414-595-21	INDUCTOR CHIP 0uH	
FB580	1-500-242-22	FERRITE 0uH	
FB582	1-500-242-22	FERRITE 0uH	
FB591	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB592	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB593	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB594	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB595	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB596	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB597	1-216-821-91	RES, CHIP 1K 5% 1/16W	
FB2000	1-500-238-22	FERRITE 0uH	
FB2001	1-500-238-22	FERRITE 0uH	
FB2002	1-500-238-22	FERRITE 0uH	
FB2003	1-500-238-22	FERRITE 0uH	
FB2004	1-500-238-22	FERRITE 0uH	
FB2005	1-500-238-22	FERRITE 0uH	
FB2100	1-500-238-22	FERRITE 0uH	
FB2101	1-500-238-22	FERRITE 0uH	
FB2102	1-500-238-22	FERRITE 0uH	
FB2103	1-500-238-22	FERRITE 0uH	
FB2104	1-500-238-22	FERRITE 0uH	
FB2105	1-500-238-22	FERRITE 0uH	
FB2106	1-500-238-22	FERRITE 0uH	
FB2107	1-500-238-22	FERRITE 0uH	
FB2108	1-500-238-22	FERRITE 0uH	
FB2109	1-500-238-22	FERRITE 0uH	
FB2110	1-500-238-22	FERRITE 0uH	
FB2111	1-500-238-22	FERRITE 0uH	
FB2112	1-500-238-22	FERRITE 0uH	
FB2113	1-500-238-22	FERRITE 0uH	
FB2114	1-500-288-21	FERRITE 0uH	
FB2115	1-500-288-21	FERRITE 0uH	
FB2116	1-500-288-21	FERRITE 0uH	
FB2122	1-500-288-21	FERRITE 0uH	
		< IC >	
IC401	8-759-987-20	IC CXD1229Q	
IC402	8-759-230-44	IC TC7S04F (TE85R)	
IC403	8-759-553-57	IC MSM5118160B-60JS-R1	
IC404	8-759-460-74	IC BA05FP-E2	
IC406	8-759-083-95	IC TC7W74FU (TE12R)	
IC407	8-759-421-81	IC F432301PGF	
IC501	8-759-542-91	IC S-80840ANUP-ED4-T2	
IC502	8-759-234-42	IC TC7S08F (TE85R)	
IC503	8-759-580-52	IC HD6437045E08F	
IC504	8-759-460-74	IC BA05FP-E2	
IC505	8-759-445-92	IC HG51BS263AFB	
IC506	8-759-563-36	IC LH531VTT	
IC508	8-759-276-28	IC LM393PS-E20	
IC509	8-759-578-84	IC KM416C4104BS-6T	
IC510	8-759-234-42	IC TC7S08F(TE85R)	
IC511	8-759-058-64	IC TC7S32FU (TE85R)	
IC513	8-759-185-70	IC TC74VHC32F (EL)	
IC514	8-759-083-95	IC TC7W74FU (TE12R)	
IC515	8-759-058-58	IC TC7S04FU (TE85R)	
IC2000	8-759-443-08	IC TC7W241FU-TE12R	
IC2001	8-759-443-08	IC TC7W241FU-TE12R	
IC2002	8-759-464-95	IC AK6420AF-E2	
IC2100	8-759-157-17	IC PQ05SZ1U	
IC2101	8-759-458-76	IC uPD72069GF-3BA	
IC2102	8-759-058-58	IC TC7S04FU (TE85R)	
		< COIL >	
L402	1-412-067-21	INDUCTOR CHIP 330uH	
L403	1-410-377-41	INDUCTOR CHIP 4.7uH	
L406	1-412-064-21	INDUCTOR CHIP 100uH	
L410	1-412-006-21	INDUCTOR CHIP 10uH	
L2000	1-414-194-21	INDUCTOR CHIP 33uH	
L2100	1-412-006-21	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q401	8-729-421-69	TRANSISTOR 2SB709A-R-TX	
Q402	8-729-402-85	TRANSISTOR XN4601-TW	
Q403	8-729-402-85	TRANSISTOR XN4601-TW	
Q404	8-729-402-85	TRANSISTOR XN4601-TW	
Q405	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q	
Q406	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q	
Q407	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q	
Q408	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q	
Q409	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q	
Q410	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q	
Q411	8-729-402-85	TRANSISTOR XN4601-TW	
Q412	8-729-402-85	TRANSISTOR XN4601-TW	
Q413	8-729-402-85	TRANSISTOR XN4601-TW	
Q414	8-729-140-76	TRANSISTOR 2SD999-T1-CLCK	
Q416	8-729-421-69	TRANSISTOR 2SB709A-R-TX	
Q2000	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q2100	8-729-027-59	TRANSISTOR DTC144EKA-T146	

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Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R001	1-216-833-91	RES, CHIP	10K	5%	1/16W
R002	1-216-833-91	RES, CHIP	10K	5%	1/16W
R003	1-216-837-91	RES, CHIP	22K	5%	1/16W
R004	1-216-837-91	RES, CHIP	22K	5%	1/16W
R005	1-216-849-91	RES, CHIP	220K	5%	1/16W
R006	1-216-841-91	RES, CHIP	47K	5%	1/16W
R009	1-216-849-91	RES, CHIP	220K	5%	1/16W
R010	1-216-841-91	RES, CHIP	47K	5%	1/16W
R156	1-216-864-91	SHORT	0		
R158	1-216-864-91	SHORT	0		
R159	1-216-864-91	SHORT	0		
R301	1-216-809-91	RES, CHIP	100	5%	1/16W
R302	1-216-817-91	RES, CHIP	470	5%	1/16W
R303	1-216-817-91	RES, CHIP	470	5%	1/16W
R304	1-218-855-91	RES, CHIP	2.2K	0.5%	1/16W
R305	1-218-855-91	RES, CHIP	2.2K	0.5%	1/16W
R311	1-216-809-91	RES, CHIP	100	5%	1/16W
R315	1-216-821-91	RES, CHIP	1K	5%	1/16W
R318	1-216-821-91	RES, CHIP	1K	5%	1/16W
R319	1-216-821-91	RES, CHIP	1K	5%	1/16W
R322	1-216-813-91	RES, CHIP	220	5%	1/16W
R400	1-247-783-11	RESISTOR	10		1/4W
R401	1-216-821-91	RES, CHIP	1K	5%	1/16W
R402	1-216-817-91	RES, CHIP	470	5%	1/16W
R403	1-216-821-91	RES, CHIP	1K	5%	1/16W
R404	1-216-821-91	RES, CHIP	1K	5%	1/16W
R405	1-216-833-91	RES, CHIP	10K	5%	1/16W
R406	1-216-838-91	RES, CHIP	27K	5%	1/16W
R407	1-216-833-91	RES, CHIP	10K	5%	1/16W
R408	1-216-838-91	RES, CHIP	27K	5%	1/16W
R409	1-216-834-91	RES, CHIP	12K	5%	1/16W
R410	1-216-841-91	RES, CHIP	47K	5%	1/16W
R412	1-216-864-91	SHORT	0		
R413	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R414	1-216-806-91	RES, CHIP	56	5%	1/16W
R416	1-216-864-91	SHORT	0		
R417	1-216-817-91	RES, CHIP	470	5%	1/16W
R419	1-216-821-91	RES, CHIP	1K	5%	1/16W
R420	1-216-817-91	RES, CHIP	470	5%	1/16W
R421	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R422	1-216-817-91	RES, CHIP	470	5%	1/16W
R423	1-216-821-91	RES, CHIP	1K	5%	1/16W
R424	1-216-813-91	RES, CHIP	220	5%	1/16W
R425	1-216-813-91	RES, CHIP	220	5%	1/16W
R426	1-216-813-91	RES, CHIP	220	5%	1/16W
R427	1-216-821-91	RES, CHIP	1K	5%	1/16W
R428	1-216-813-91	RES, CHIP	220	5%	1/16W
R429	1-216-813-91	RES, CHIP	220	5%	1/16W
R430	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R431	1-216-806-91	RES, CHIP	56	5%	1/16W
R432	1-216-813-91	RES, CHIP	220	5%	1/16W
R433	1-216-813-91	RES, CHIP	220	5%	1/16W
R434	1-216-811-91	RES, CHIP	150	5%	1/16W
R435	1-216-855-91	RES, CHIP	680K	5%	1/16W
R436	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R437	1-216-821-91	RES, CHIP	1K	5%	1/16W
R438	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R439	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R440	1-216-839-91	RES, CHIP	33K	5%	1/16W
R441	1-216-839-91	RES, CHIP	33K	5%	1/16W
R442	1-216-833-91	RES, CHIP	10K	5%	1/16W
R444	1-216-833-91	RES, CHIP	10K	5%	1/16W
R446	1-216-833-91	RES, CHIP	10K	5%	1/16W
R447	1-216-809-91	RES, CHIP	100	5%	1/16W
R448	1-216-833-91	RES, CHIP	10K	5%	1/16W
R449	1-216-839-91	RES, CHIP	33K	5%	1/16W
R450	1-216-833-91	RES, CHIP	10K	5%	1/16W
R451	1-216-816-91	RES, CHIP	390	5%	1/16W
R452	1-216-821-91	RES, CHIP	1K	5%	1/16W
R453	1-216-821-91	RES, CHIP	1K	5%	1/16W
R454	1-216-850-91	RES, CHIP	270K	5%	1/16W
R455	1-216-809-91	RES, CHIP	100	5%	1/16W
R456	1-218-844-91	RES, CHIP	750	0.5%	1/16W
R457	1-218-855-91	RES, CHIP	2.2K	0.5%	1/16W
R458	1-218-855-91	RES, CHIP	2.2K	0.5%	1/16W
R459	1-216-809-91	RES, CHIP	100	5%	1/16W
R460	1-216-817-91	RES, CHIP	470	5%	1/16W
R461	1-216-821-91	RES, CHIP	1K	5%	1/16W
R462	1-216-839-91	RES, CHIP	33K	5%	1/16W
R463	1-216-817-91	RES, CHIP	470	5%	1/16W
R464	1-216-809-91	RES, CHIP	100	5%	1/16W
R465	1-216-806-91	RES, CHIP	56	5%	1/16W
R466	1-216-806-91	RES, CHIP	56	5%	1/16W
R467	1-216-845-91	RES, CHIP	100K	5%	1/16W
R468	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R469	1-216-809-91	RES, CHIP	100	5%	1/16W
R470	1-218-852-91	RES, CHIP	1.6K	0.5%	1/16W
R471	1-218-830-91	RES, CHIP	200	0.5%	1/16W
R472	1-218-852-91	RES, CHIP	1.6K	0.5%	1/16W
R473	1-218-830-91	RES, CHIP	200	0.5%	1/16W
R474	1-216-821-91	RES, CHIP	1K	5%	1/16W
R475	1-218-852-91	RES, CHIP	1.6K	0.5%	1/16W
R476	1-218-830-91	RES, CHIP	200	0.5%	1/16W
R477	1-216-841-91	RES, CHIP	47K	5%	1/16W
R478	1-216-821-91	RES, CHIP	1K	5%	1/16W
R479	1-216-820-91	RES, CHIP	820	5%	1/16W
R480	1-216-820-91	RES, CHIP	820	5%	1/16W
R481	1-216-809-91	RES, CHIP	100	5%	1/16W
R482	1-216-809-91	RES, CHIP	100	5%	1/16W
R483	1-216-813-91	RES, CHIP	220	5%	1/16W
R486	1-216-864-91	SHORT	0		
R487	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R488	1-216-809-91	RES, CHIP	100	5%	1/16W
R489	1-216-809-91	RES, CHIP	100	5%	1/16W
R490	1-216-821-91	RES, CHIP	1K	5%	1/16W
R492	1-216-821-91	RES, CHIP	1K	5%	1/16W
R493	1-216-809-91	RES, CHIP	100	5%	1/16W
R494	1-216-809-91	RES, CHIP	100	5%	1/16W
R496	1-216-841-91	RES, CHIP	47K	5%	1/16W
R497	1-216-821-91	RES, CHIP	1K	5%	1/16W
R500	1-216-809-91	RES, CHIP	100	5%	1/16W
R501	1-216-864-91	SHORT	0		
R502	1-216-809-91	RES, CHIP	100	5%	1/16W
R504	1-216-809-91	RES, CHIP	100	5%	1/16W

Ref. No.	Part No.	Description			Remark
R505	1-216-853-91	RES, CHIP	470K	5%	1/16W
R506	1-216-809-91	RES, CHIP	100	5%	1/16W
R509	1-216-857-91	RES, CHIP	1M	5%	1/16W
R510	1-216-809-91	RES, CHIP	100	5%	1/16W
R512	1-216-864-91	SHORT	0		
R513	1-216-809-91	RES, CHIP	100	5%	1/16W
R514	1-216-841-91	RES, CHIP	47K	5%	1/16W
R515	1-216-833-91	RES, CHIP	10K	5%	1/16W
R518	1-216-836-91	RES, CHIP	18K	5%	1/16W
R519	1-216-809-91	RES, CHIP	100	5%	1/16W
R520	1-216-809-91	RES, CHIP	100	5%	1/16W
R521	1-216-853-91	RES, CHIP	470K	5%	1/16W
R523	1-216-809-91	RES, CHIP	100	5%	1/16W
R524	1-216-841-91	RES, CHIP	47K	5%	1/16W
R525	1-216-809-91	RES, CHIP	100	5%	1/16W
R527	1-216-809-91	RES, CHIP	100	5%	1/16W
R528	1-216-809-91	RES, CHIP	100	5%	1/16W
R529	1-216-809-91	RES, CHIP	100	5%	1/16W
R532	1-216-809-91	RES, CHIP	100	5%	1/16W
R533	1-216-809-91	RES, CHIP	100	5%	1/16W
R536	1-216-809-91	RES, CHIP	100	5%	1/16W
R537	1-216-813-91	RES, CHIP	220	5%	1/16W
R538	1-218-852-91	RES, CHIP	1.6K	0.5%	1/16W
R540	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R542	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R544	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R546	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R549	1-218-839-91	RES, CHIP	470	0.5%	1/16W
R550	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R563	1-216-809-91	RES, CHIP	100	5%	1/16W
R566	1-216-809-91	RES, CHIP	100	5%	1/16W
R567	1-216-809-91	RES, CHIP	100	5%	1/16W
R572	1-216-809-91	RES, CHIP	100	5%	1/16W
R574	1-216-809-91	RES, CHIP	100	5%	1/16W
R576	1-216-809-91	RES, CHIP	100	5%	1/16W
R579	1-216-809-91	RES, CHIP	100	5%	1/16W
R580	1-216-809-91	RES, CHIP	100	5%	1/16W
R581	1-216-821-91	RES, CHIP	1K	5%	1/16W
R582	1-216-821-91	RES, CHIP	1K	5%	1/16W
R583	1-216-821-91	RES, CHIP	1K	5%	1/16W
R584	1-216-821-91	RES, CHIP	1K	5%	1/16W
R594	1-216-809-91	RES, CHIP	100	5%	1/16W
R604	1-218-830-91	RES, CHIP	200	0.5%	1/16W
R605	1-218-858-91	RES, CHIP	3K	0.5%	1/16W
R612	1-216-841-91	RES, CHIP	47K	5%	1/16W
R615	1-216-809-91	RES, CHIP	100	5%	1/16W
R622	1-216-809-91	RES, CHIP	100	5%	1/16W
R623	1-216-809-91	RES, CHIP	100	5%	1/16W
R629	1-216-809-91	RES, CHIP	100	5%	1/16W
R632	1-216-809-91	RES, CHIP	100	5%	1/16W
R633	1-216-809-91	RES, CHIP	100	5%	1/16W
R654	1-216-841-91	RES, CHIP	47K	5%	1/16W
R655	1-216-841-91	RES, CHIP	47K	5%	1/16W
R656	1-216-841-91	RES, CHIP	47K	5%	1/16W
R657	1-216-841-91	RES, CHIP	47K	5%	1/16W
R658	1-216-841-91	RES, CHIP	47K	5%	1/16W
R659	1-216-841-91	RES, CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R660	1-216-837-91	RES, CHIP	22K	5%	1/16W
R661	1-216-837-91	RES, CHIP	22K	5%	1/16W
R662	1-216-837-91	RES, CHIP	22K	5%	1/16W
R663	1-216-841-91	RES, CHIP	47K	5%	1/16W
R664	1-216-841-91	RES, CHIP	47K	5%	1/16W
R665	1-216-841-91	RES, CHIP	47K	5%	1/16W
R666	1-216-821-91	RES, CHIP	1K	5%	1/16W
R667	1-216-841-91	RES, CHIP	47K	5%	1/16W
R692	1-216-833-91	RES, CHIP	10K	5%	1/16W
R693	1-216-833-91	RES, CHIP	10K	5%	1/16W
R694	1-216-833-91	RES, CHIP	10K	5%	1/16W
R695	1-216-833-91	RES, CHIP	10K	5%	1/16W
R696	1-216-833-91	RES, CHIP	10K	5%	1/16W
R697	1-216-833-91	RES, CHIP	10K	5%	1/16W
R2003	1-216-809-91	RES, CHIP	100	5%	1/16W
R2004	1-216-809-91	RES, CHIP	100	5%	1/16W
R2005	1-216-809-91	RES, CHIP	100	5%	1/16W
R2006	1-216-809-91	RES, CHIP	100	5%	1/16W
R2007	1-216-833-91	RES, CHIP	10K	5%	1/16W
R2008	1-216-833-91	RES, CHIP	10K	5%	1/16W
R2009	1-216-809-91	RES, CHIP	100	5%	1/16W
R2010	1-216-864-91	SHORT	0		
R2012	1-216-833-91	RES, CHIP	10K	5%	1/16W
R2014	1-216-817-91	RES, CHIP	470	5%	1/16W
R2015	1-216-817-91	RES, CHIP	470	5%	1/16W
R2100	1-216-821-91	RES, CHIP	1K	5%	1/16W
R2101	1-216-821-91	RES, CHIP	1K	5%	1/16W
R2102	1-216-833-91	RES, CHIP	10K	5%	1/16W
R2103	1-216-821-91	RES, CHIP	1K	5%	1/16W
R2104	1-216-821-91	RES, CHIP	1K	5%	1/16W
R2105	1-216-821-91	RES, CHIP	1K	5%	1/16W
R2106	1-218-854-91	RES, CHIP	2K	0.5%	1/16W
R2107	1-218-878-91	RES, CHIP	20K	0.5%	1/16W
R2108	1-216-864-91	SHORT	0		
R2109	1-216-864-91	SHORT	0		
R2111	1-216-864-91	SHORT	0		
R2112	1-216-833-91	RES, CHIP	10K	5%	1/16W
R2114	1-216-864-91	SHORT	0		
R2115	1-216-841-91	RES, CHIP	47K	5%	1/16W
R2116	1-216-864-91	SHORT	0		

< NETWORK RESISTOR >

RB401	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB402	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB403	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB404	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB405	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB406	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB407	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB408	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB409	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB410	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB417	1-236-904-91	NETWORK RESISTOR (CHIP) 1K
RB501	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB502	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB503	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB504	1-239-412-91	NETWORK RESISTOR (CHIP) 100
RB505	1-239-412-91	NETWORK RESISTOR (CHIP) 100

Ref. No.	Part No.	Description	Remark
RB506	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB507	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB508	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB509	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB510	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB511	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB512	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB513	1-239-419-91	NETWORK RESISTOR (CHIP) 470	
RB514	1-239-419-91	NETWORK RESISTOR (CHIP) 470	
RB515	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB516	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB520	1-236-904-91	NETWORK RESISTOR (CHIP) 1K	
RB521	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB2100	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
RB2101	1-239-412-91	NETWORK RESISTOR (CHIP) 100	
		< VARIABLE RESISTOR >	
RV401	1-238-853-21	RES, ADJ, CERMET 1K	
RV402	1-238-853-21	RES, ADJ, CERMET 1K	
RV404	1-238-855-21	RES, ADJ, CERMET 4.7K	
RV405	1-238-854-21	RES, ADJ, CERMET 2.2K	
		< VIBRATOR >	
X502	1-579-907-21	VIBRATOR, CERAMIC (20MHz)	
X503	1-781-230-21	VIBRATOR, CRYSTAL (7.159MHz)	
X2100	1-781-262-21	VIBRATOR, CRYSTAL (16MHz)	
**********			
	A-8054-968-A	FE-39 BOARD, COMPLETE	
		**********	
		< CONNECTOR >	
CN1881	1-785-468-11	CONNECTOR, FFC/FPC 13P	
CN1882	1-778-273-11	CONNECTOR (RESEPTACLE) 15P	
		< DIODE >	
D1881	8-719-066-17	DIODE FTZ6.8E-T148	
D1882	8-719-066-17	DIODE FTZ6.8E-T148	
D1885	8-719-017-19	DIODE 02DZ10-TPH3	
**********			
	1-661-554-11	FP-702 FLEXIBLE BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PH904	8-719-980-75	PHOTO INTERRUPTER GP2S24-C	
PH905	8-719-980-75	PHOTO INTERRUPTER GP2S24-C	
PH906	8-719-980-75	PHOTO INTERRUPTER GP2S24-C	
**********			
	1-661-553-11	FP-703 FLEXIBLE BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PH901	8-719-980-75	PHOTO INTERRUPTER GP2S24-C	
PH902	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
PH903	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
**********			

Ref. No.	Part No.	Description	Remark
	A-8054-961-A	HP-39 BOARD, COMPLETE	
		**********	
		< CONNECTOR >	
* CN1851	1-573-768-21	PIN, CONNECTOR (1.5MM) (SMD)5P	
		< PHOTO INTERRUPTER >	
PH1851	8-749-015-68	PHOTO INTERRUPTER RPI-221N	
PH1852	8-749-015-68	PHOTO INTERRUPTER RPI-221N	
**********			
	A-8054-959-A	JD-39 BOARD, COMPLETE	
		**********	
		< CONNECTOR >	
CN1861	1-691-550-21	PIN, CONNECTOR (1.5MM)(SMD) 3P	
		< PHOTO INTERRUPTER >	
PH1861	8-719-980-75	PHOTO INTERRUPTER GP2S24-C	
**********			
	A-8054-958-A	MD-39 BOARD, COMPLETE	
		**********	
		< CAPACITOR >	
C1900	1-164-156-91	CERAMIC CHIP 0.1uF 25V	
C1901	1-164-156-91	CERAMIC CHIP 0.1uF 25V	
C1902	1-164-695-91	CERAMIC CHIP 0.0022uF 5% 50V	
C1903	1-164-695-91	CERAMIC CHIP 0.0022uF 5% 50V	
C1904	1-164-315-91	CERAMIC CHIP 470PF 5% 50V	
C1905	1-164-315-91	CERAMIC CHIP 470PF 5% 50V	
C1906	1-164-156-91	CERAMIC CHIP 0.1uF 25V	
C1907	1-164-156-91	CERAMIC CHIP 0.1uF 25V	
C1910	1-164-156-91	CERAMIC CHIP 0.1uF 25V	
C1911	1-164-156-91	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
* CN1931	1-569-775-21	PIN, CONNECTOR 5P	
* CN1932	1-580-055-21	PIN, CONNECTOR 2P	
CN1933	1-573-347-21	CONNECTOR, FFC/FPC 7P	
CN1934	1-573-917-21	CONNECTOR, FFC/FPC (ZIF) 8P	
* CN1935	1-580-056-21	PIN, CONNECTOR 3P	
CN1936	1-573-370-21	CONNECTOR, FFC/FPC 30P	
CN1937	1-564-630-11	PIN, CONNECTOR 14P	
* CN1938	1-580-055-41	PIN, CONNECTOR 2P	
* CN1940	1-580-056-41	PIN, CONNECTOR (SMD) 3P	
CN1941	1-580-055-61	PIN, CONNECTOR 2P	
CN1942	1-564-016-11	PIN, CONNECTOR 6P	
* CN1943	1-580-057-21	PIN, CONNECTOR 4P	
		< DIODE >	
D1901	8-719-941-21	DIODE DAP202UT106	
D1903	8-719-056-77	DIODE UDZ-TE-17-3.9B	
		< FUSE >	
⚠F1901	1-533-771-21	FUSE (SMD) (0.8A)	
⚠F1902	1-533-771-21	FUSE (SMD) (0.8A)	
⚠F1903	1-533-710-21	FUSE (SMD) (1.6A)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
⚠F1904	1-533-710-21	FUSE (SMD) (1.6A)			
		< IC >			
IC1900	8-759-821-82	IC LB1644			
IC1901	8-759-471-56	IC STA506A			
IC1902	8-759-329-01	IC LM339NS-E20			
IC1903	8-759-268-60	IC SN74HC08ANS-E05			
		< TRANSISTOR >			
Q1900	8-729-140-76	TRANSISTOR 2SD999-T1-CLCK			
Q1902	8-729-027-43	TRANSISTOR DTC114EKA-T146			
Q1903	8-729-904-61	TRANSISTOR DTB113ZK-T-146			
		< RESISTOR >			
R1900	1-216-033-91	RES, CHIP	220	5%	1/10W
R1901	1-216-033-91	RES, CHIP	220	5%	1/10W
R1902	1-216-033-91	RES, CHIP	220	5%	1/10W
R1903	1-216-033-91	RES, CHIP	220	5%	1/10W
R1904	1-216-033-91	RES, CHIP	220	5%	1/10W
R1905	1-216-033-91	RES, CHIP	220	5%	1/10W
R1906	1-216-033-91	RES, CHIP	220	5%	1/10W
R1907	1-216-033-91	RES, CHIP	220	5%	1/10W
R1908	1-216-033-91	RES, CHIP	220	5%	1/10W
R1910	1-216-841-91	RES, CHIP	47K	5%	1/16W
R1911	1-216-817-91	RES, CHIP	470	5%	1/16W
R1917	1-218-835-91	RES, CHIP	330	0.5%	1/16W
R1918	1-218-827-91	RES, CHIP	150	0.5%	1/16W
R1919	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R1920	1-218-847-91	RES, CHIP	1K	0.5%	1/16W
R1921	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
⚠R1922	1-216-352-51	METAL OXIDE	1.8	5%	1W F
⚠R1923	1-216-352-51	METAL OXIDE	1.8	5%	1W F
R1924	1-216-841-91	RES, CHIP	47K	5%	1/16W
R1925	1-216-841-91	RES, CHIP	47K	5%	1/16W
R1926	1-218-847-91	RES, CHIP	1K	0.5%	1/16W
R1927	1-216-841-91	RES, CHIP	47K	5%	1/16W
R1937	1-216-827-91	RES, CHIP	3.3K	5%	1/16W
R1938	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R1939	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R1940	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R1944	1-216-864-91	SHORT	0		
R1945	1-216-841-91	RES, CHIP	47K	5%	1/16W
**********					
	A-8054-960-A	RD-39 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* CN1871	1-580-055-21	PIN, CONNECTOR 2P			
		< SWITCH >			
S1871	1-572-467-11	SWITCH, PUSH (1 KEY) (RIBBON DOOR DETECT)			
**********					

Ref. No.	Part No.	Description		Remark
	A-8054-962-A	SW-39 BOARD, COMPLETE		
		**********		
		< BATTERY >		
BT1700	1-528-724-11	BATTERY, V/L RICHARGEABLE		
		< CAPACITOR >		
C1700	1-163-038-91	CERAMIC CHIP	0.1MF	25V
C1701	1-163-038-91	CERAMIC CHIP	0.1MF	25V
		< CONNECTOR >		
CN1701	1-785-684-11	CONNECTOR, FFC		
		< DIODE >		
D1731	8-719-023-59	LED PG1102W-TR (POWER)		
D1733	8-719-018-24	LED AA1102W-TR (INPUT)		
D1734	8-719-018-24	LED AA1102W-TR (MEMORY)		
D1735	8-719-018-24	LED AA1102W-TR (RIBBON ERROR)		
D1736	8-719-018-24	LED AA1102W-TR (PAPER ERROR)		
D1737	8-719-064-59	LED PG1101F-TR (PRINTING STATUS INDICATOR)		
D1738	8-719-064-59	LED PG1101F-TR (PRINTING STATUS INDICATOR)		
D1739	8-719-064-59	LED PG1101F-TR (PRINTING STATUS INDICATOR)		
D1750	8-719-421-28	DIODE MA728-TX		
		< FERRITE BEAD >		
FB1700	1-500-241-22	FERRITE	0uH	
FB1701	1-500-241-22	FERRITE	0uH	
FB1702	1-500-241-22	FERRITE	0uH	
FB1703	1-500-241-22	FERRITE	0uH	
FB1704	1-500-242-22	FERRITE	0uH	
FB1705	1-500-242-22	FERRITE	0uH	
FB1706	1-500-242-22	FERRITE	0uH	
		< IC >		
IC1700	8-759-570-30	IC RTC-4543SB		
		< SHORT >		
JR1701	1-216-296-91	SHORT	0	
JR1702	1-216-296-91	SHORT	0	
JR1703	1-216-296-91	SHORT	0	
JR1704	1-216-296-91	SHORT	0	
JR1705	1-216-296-91	SHORT	0	
JR1706	1-216-296-91	SHORT	0	
JR1707	1-216-296-91	SHORT	0	
JR1708	1-216-296-91	SHORT	0	
JR1709	1-216-296-91	SHORT	0	
JR1710	1-216-296-91	SHORT	0	
JR1711	1-216-296-91	SHORT	0	
		< COIL >		
L1700	1-412-058-21	INDUCTOR CHIP	10uH	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SW-39 **VI-39**

Ref. No.	Part No.	Description			Remark
		< HARNESS >			
LN1701	1-958-356-31	HARNESS			
		< TRANSISTOR >			
Q1731	8-729-923-81	TRANSISTOR DTC143EK-T146			
		< RESISTOR >			
R1701	1-216-210-91	RES, CHIP	3.3K	5%	1/8W
R1702	1-216-202-91	RES, CHIP	1.5K	5%	1/8W
R1703	1-216-242-91	RES, CHIP	68K	5%	1/8W
R1704	1-216-228-91	RES, CHIP	18K	5%	1/8W
R1705	1-216-234-91	RES, CHIP	33K	5%	1/8W
R1706	1-216-222-91	RES, CHIP	10K	5%	1/8W
R1707	1-216-216-91	RES, CHIP	5.6K	5%	1/8W
R1709	1-216-296-91	SHORT	0		
R1710	1-216-224-91	RES, CHIP	12K	5%	1/8W
R1711	1-216-218-91	RES, CHIP	6.8K	5%	1/8W
R1712	1-216-212-91	RES, CHIP	3.9K	5%	1/8W
R1713	1-216-208-91	RES, CHIP	2.7K	5%	1/8W
R1714	1-216-204-91	RES, CHIP	1.8K	5%	1/8W
R1715	1-216-202-91	RES, CHIP	1.5K	5%	1/8W
R1716	1-216-202-91	RES, CHIP	1.5K	5%	1/8W
R1717	1-216-204-91	RES, CHIP	1.8K	5%	1/8W
R1718	1-216-208-91	RES, CHIP	2.7K	5%	1/8W
R1719	1-216-212-91	RES, CHIP	3.9K	5%	1/8W
R1720	1-216-218-91	RES, CHIP	6.8K	5%	1/8W
R1721	1-216-224-91	RES, CHIP	12K	5%	1/8W
R1722	1-216-236-91	RES, CHIP	39K	5%	1/8W
R1723	1-216-236-91	RES, CHIP	39K	5%	1/8W
R1724	1-216-296-91	SHORT	0		
R1725	1-216-296-91	SHORT	0		
R1731	1-216-182-91	RES, CHIP	220	5%	1/8W
R1733	1-216-182-91	RES, CHIP	220	5%	1/8W
R1734	1-216-182-91	RES, CHIP	220	5%	1/8W
R1735	1-216-182-91	RES, CHIP	220	5%	1/8W
R1736	1-216-182-91	RES, CHIP	220	5%	1/8W
R1737	1-216-182-91	RES, CHIP	220	5%	1/8W
R1738	1-216-182-91	RES, CHIP	220	5%	1/8W
R1739	1-216-182-91	RES, CHIP	220	5%	1/8W
R1750	1-216-190-91	RES, CHIP	470	5%	1/8W
R1751	1-216-180-91	RES, CHIP	180	5%	1/8W
R1752	1-216-296-91	SHORT	0		
R1753	1-216-296-91	SHORT	0		
R1754	1-216-214-91	RES, CHIP	4.7K	5%	1/8W
R1755	1-216-214-91	RES, CHIP	4.7K	5%	1/8W
		< SWITCH >			
S1701	1-762-733-21	SWITCH, ROTARY (FUNCTION SELECT)			
S1702	1-771-497-21	SWITCH, SLIDE (PRESET SELECT)			
S1706	1-572-921-21	SWITCH, KEY BOARD (PRINT)			
S1707	1-572-921-21	SWITCH, KEY BOARD (CAPTURE)			
S1708	1-572-921-21	SWITCH, KEY BOARD (PICTURE)			
S1710	1-572-921-21	SWITCH, KEY BOARD (⇨)			
S1711	1-572-921-21	SWITCH, KEY BOARD (⇦)			
S1712	1-572-921-21	SWITCH, KEY BOARD (⇩)			
S1713	1-572-921-21	SWITCH, KEY BOARD (⇧)			
S1714	1-572-921-21	SWITCH, KEY BOARD (VIDEO ► FD, SAVE)			
S1715	1-572-921-21	SWITCH, KEY BOARD (CLOCK SET)			
S1717	1-572-921-21	SWITCH, KEY BOARD (ENTER)			
S1718	1-572-921-21	SWITCH, KEY BOARD (C, CLEAR ALL)			
S1719	1-771-497-21	SWITCH, SLIDE (INPUT SELECT)			
S1720	1-771-246-21	SWITCH, SLIDE (DATE)			
**********					
	A-8054-971-A	VI-39 BOARD, COMPLETE **********			
		< CAPACITOR >			
C100	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C102	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C103	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C104	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C105	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C106	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C107	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C108	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C109	1-126-193-21	ELECT CHIP	1uF	20%	50V
C110	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C111	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C112	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C113	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C114	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C116	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C117	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C118	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C119	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C120	1-124-778-21	ELECT CHIP	22UF	20%	6.3V
C121	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C122	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C123	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C124	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C125	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C126	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C127	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C128	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C130	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C131	1-162-915-91	CERAMIC CHIP	10PF	0.5PF	50V
C133	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C139	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C141	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C144	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C145	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C146	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C147	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C148	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C149	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C150	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C151	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C152	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C153	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C154	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C156	1-164-326-91	CERAMIC CHIP	0.47uF		16V
C157	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C158	1-115-416-91	CERAMIC CHIP	1000PF	5%	25V
C159	1-124-778-21	ELECT CHIP	22uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C160	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C161	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C162	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C163	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C164	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C167	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C168	1-165-176-91	CERAMIC CHIP	0.047uF	10%	16V
C169	1-126-205-21	ELECT CHIP	47uF	20%	6.3V
C170	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C171	1-165-176-91	CERAMIC CHIP	0.047uF	10%	16V
C172	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C173	1-162-915-91	CERAMIC CHIP	10PF	0.5PF	50V
C174	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C175	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C176	1-162-916-91	CERAMIC CHIP	12PF	5%	50V
C177	1-115-416-91	CERAMIC CHIP	1000PF	5%	25V
C178	1-162-915-91	CERAMIC CHIP	10PF	0.5PF	50V
C183	1-162-916-91	CERAMIC CHIP	12PF	5%	50V
C184	1-162-921-91	CERAMIC CHIP	33PF	5%	50V
C185	1-162-910-91	CERAMIC CHIP	5PF	0.25PF	50V
C186	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C187	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C188	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C189	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C190	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C193	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C194	1-124-778-21	CERAMIC CHIP	22uF	20%	6.3V
C195	1-124-779-21	ELECT CHIP	10uF	20%	16V
C196	1-124-778-21	CERAMIC CHIP	22uF	20%	6.3V
C197	1-104-913-91	TANTALUM CHIP	10uF	20%	16V
C198	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C201	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C202	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C250	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C251	1-126-193-21	ELECT CHIP	1uF	20%	50V
C252	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C253	1-115-416-91	CERAMIC CHIP	1000PF	5%	25V
C254	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C255	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C256	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C257	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C258	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C259	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C260	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C261	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C262	1-164-156-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-785-467-11	CONNECTOR, FFC/FPC 8P			
CN102	1-785-471-11	CONNECTOR, FPC 20P			
		< TRIMMER >			
CT102	1-141-367-51	CAP, CHIP TRIMMER 20PF			
CT103	1-141-368-51	CAP, CHIP TRIMMER 30PF			
CT250	1-141-367-51	CAP, CHIP TRIMMER 20PF			

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D100	8-719-404-50	DIODE MA111-TX			
		< FERRITE BEAD >			
FB101	1-500-288-21	FERRITE 0uH			
		< FILTER/COIL >			
FL101	1-233-746-21	FILTER, BAND PASS			
FL102	1-233-676-21	FILTER, LOW PASS			
FL105	1-233-745-21	FILTER, LOW PASS			
FL106	1-233-744-21	FILTER, LOW PASS			
FL107	1-233-744-21	FILTER, LOW PASS			
FL250	1-233-455-21	FILTER, BAND PASS			
FL251	1-459-949-21	COIL			
		< IC >			
IC101	8-759-446-66	IC MM1113XFBE			
IC102	8-759-446-66	IC MM1113XFBE			
IC103	8-752-061-15	IC CXA1229M-T6			
IC105	8-752-372-78	IC CXD2024AQ			
IC108	8-759-253-78	IC M51271FP-70AD			
IC110	8-759-182-84	IC PQ05SZ5U			
IC250	8-752-353-95	IC CXL5506M-T4			
		< COIL >			
L100	1-412-006-21	INDUCTOR CHIP 10uH			
L101	1-412-006-21	INDUCTOR CHIP 10uH			
L102	1-412-006-21	INDUCTOR CHIP 10uH			
L103	1-412-006-21	INDUCTOR CHIP 10uH			
L104	1-412-006-21	INDUCTOR CHIP 10uH			
L106	1-412-006-21	INDUCTOR CHIP 10uH			
		< TRANSISTOR >			
Q101	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q			
Q102	8-729-402-82	TRANSISTOR XN4501-TW			
Q104	8-729-402-82	TRANSISTOR XN4501-TW			
Q107	8-729-402-82	TRANSISTOR XN4501-TW			
Q109	8-729-402-82	TRANSISTOR XN4501-TW			
Q113	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q			
Q123	8-729-402-85	TRANSISTOR XN4601-TW			
Q124	8-729-402-85	TRANSISTOR XN4601-TW			
Q250	8-729-421-69	TRANSISTOR 2SB709A-R-TX			
Q251	8-729-421-69	TRANSISTOR 2SB709A-R-TX			
Q252	8-729-901-80	TRANSISTOR 2SC2412K-T-146-Q			
		< RESISTOR >			
R100	1-216-832-91	RES, CHIP	8.2K	5%	1/16W
R101	1-216-817-91	RES, CHIP	470	5%	1/16W
R102	1-216-821-91	RES, CHIP	1K	5%	1/16W
R103	1-216-821-91	RES, CHIP	1K	5%	1/16W
R104	1-216-817-91	RES, CHIP	470	5%	1/16W
R105	1-216-817-91	RES, CHIP	470	5%	1/16W
R106	1-216-817-91	RES, CHIP	470	5%	1/16W
R109	1-216-833-91	RES, CHIP	10K	5%	1/16W
R111	1-216-839-91	RES, CHIP	33K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R112	1-216-839-91	RES, CHIP	33K	5%	1/16W
R113	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R114	1-216-816-91	RES, CHIP	390	5%	1/16W
R115	1-216-818-91	RES, CHIP	560	5%	1/16W
R116	1-211-990-91	RES, CHIP	75	0.5%	1/16W
R117	1-216-864-91	SHORT	0		
R118	1-216-821-91	RES, CHIP	1K	5%	1/16W
R119	1-216-813-91	RES, CHIP	220	5%	1/16W
R120	1-216-821-91	RES, CHIP	1K	5%	1/16W
R122	1-216-815-91	RES, CHIP	330	5%	1/16W
R123	1-216-833-91	RES, CHIP	10K	5%	1/16W
R124	1-218-881-91	RES, CHIP	27K	0.5%	1/16W
R125	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R127	1-216-843-91	RES, CHIP	68K	5%	1/16W
R128	1-216-817-91	RES, CHIP	470	5%	1/16W
R133	1-216-864-91	SHORT	0		
R135	1-216-821-91	RES, CHIP	1K	5%	1/16W
R136	1-216-821-91	RES, CHIP	1K	5%	1/16W
R137	1-216-864-91	SHORT	0		
R138	1-218-849-91	RES, CHIP	1.2K	0.5%	1/16W
R139	1-216-819-91	RES, CHIP	680	5%	1/16W
R140	1-216-802-91	RES, CHIP	27	5%	1/16W
R141	1-216-819-91	RES, CHIP	680	5%	1/16W
R145	1-216-839-91	RES, CHIP	33K	5%	1/16W
R146	1-216-832-91	RES, CHIP	8.2K	5%	1/16W
R147	1-218-851-91	RES, CHIP	1.5K	0.5%	1/16W
R148	1-216-819-91	RES, CHIP	680	5%	1/16W
R150	1-216-818-91	RES, CHIP	560	5%	1/16W
R151	1-216-864-91	SHORT	0		
R152	1-216-864-91	SHORT	0		
R153	1-216-864-91	SHORT	0		
R154	1-216-864-91	SHORT	0		
R155	1-216-864-91	SHORT	0		
R157	1-218-859-91	RES, CHIP	3.3K	0.5%	1/16W
R160	1-216-809-91	RES, CHIP	100	5%	1/16W
R161	1-216-833-91	RES, CHIP	10K	5%	1/16W
R162	1-216-839-91	RES, CHIP	33K	5%	1/16W
R163	1-216-836-91	RES, CHIP	18K	5%	1/16W
R164	1-202-930-91	RES, CHIP	750K	5%	1/16W
R165	1-218-830-91	RES, CHIP	200	0.5%	1/16W
R166	1-218-859-91	RES, CHIP	3.3K	0.5%	1/16W
R167	1-218-830-91	RES, CHIP	200	0.5%	1/16W
R168	1-216-844-91	RES, CHIP	82K	5%	1/16W
R169	1-218-836-91	RES, CHIP	18K	5%	1/16W
R170	1-216-817-91	RES, CHIP	470	5%	1/16W
R171	1-216-821-91	RES, CHIP	1K	5%	1/16W
R172	1-216-821-91	RES, CHIP	1K	5%	1/16W
R173	1-216-840-91	RES, CHIP	39K	5%	1/16W
R174	1-216-864-91	SHORT	0		
R175	1-216-821-91	RES, CHIP	1K	5%	1/16W
R177	1-216-821-91	RES, CHIP	1K	5%	1/16W
R178	1-216-850-91	RES, CHIP	270K	5%	1/16W
R179	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R187	1-216-864-91	SHORT	0		
R188	1-211-986-91	RES, CHIP	51	0.5%	1/16W
R190	1-216-817-91	RES, CHIP	470	5%	1/16W
R191	1-216-837-91	RES, CHIP	22K	5%	1/16W
R192	1-216-837-91	RES, CHIP	22K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R193	1-216-821-91	RES, CHIP	1K	5%	1/16W
R196	1-216-836-91	RES, CHIP	18K	5%	1/16W
R197	1-216-836-91	RES, CHIP	18K	5%	1/16W
R202	1-216-821-91	RES, CHIP	1K	5%	1/16W
R203	1-216-821-91	RES, CHIP	1K	5%	1/16W
R204	1-216-821-91	RES, CHIP	1K	5%	1/16W
R207	1-216-841-91	RES, CHIP	47K	5%	1/16W
R214	1-216-821-91	RES, CHIP	1K	5%	1/16W
R215	1-216-821-91	RES, CHIP	1K	5%	1/16W
R221	1-216-821-91	RES, CHIP	1K	5%	1/16W
R222	1-216-821-91	RES, CHIP	1K	5%	1/16W
R238	1-216-864-91	SHORT	0		
R239	1-216-864-91	SHORT	0		
R250	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R251	1-216-854-91	RES, CHIP	560K	5%	1/16W
R252	1-216-851-91	RES, CHIP	330K	5%	1/16W
R253	1-216-821-91	RES, CHIP	1K	5%	1/16W
R254	1-216-811-91	RES, CHIP	150	5%	1/16W
R255	1-216-821-91	RES, CHIP	1K	5%	1/16W
R256	1-216-841-91	RES, CHIP	47K	5%	1/16W
R257	1-216-841-91	RES, CHIP	47K	5%	1/16W
R258	1-216-821-91	RES, CHIP	1K	5%	1/16W
R259	1-216-841-91	RES, CHIP	47K	5%	1/16W
R260	1-216-821-91	RES, CHIP	1K	5%	1/16W
R280	1-216-835-91	RES, CHIP	15K	5%	1/16W
R289	1-216-846-91	RES, CHIP	120K	5%	1/16W
		< VARIABLE RESISTOR >			
RV102	1-223-273-21	RES, ADJ, CERMET 1K			
RV103	1-223-273-21	RES, ADJ, CERMET 1K			
RV105	1-223-258-21	RES, ADJ, CERMET 4.7K			
RV106	1-223-258-21	RES, ADJ, CERMET 4.7K			
RV250	1-223-272-21	RES, ADJ, CERMET 470			
		< VIBRATOR >			
X101	1-781-295-21	VIBRATOR, CRYSTAL (17.73MHz)			
X102	1-781-231-21	VIBRATOR, CRYSTAL (4.43MHz)			
**********					
	A-8054-967-A	VS-39 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1801	1-126-611-11	ELECT	1000MF	20%	6.3V
		< CONNECTOR/JACK >			
CJ1801	1-694-129-11	TERMINAL, S (S-VIDEO INPUT)			
CN1801	1-778-320-21	CONNECTOR, FPC 8P			
		< DIODE >			
D1801	8-719-017-13	DIODE 02DZ7.5-TPH3			
D1802	8-719-067-40	DIODE STZ6.8N-T146			
D1803	8-719-067-40	DIODE STZ6.8N-T146			
D1804	8-719-067-40	DIODE STZ6.8N-T146			
D1805	8-719-067-40	DIODE STZ6.8N-T146			

Ref. No.	Part No.	Description			Remark
		< JACK >			
J1801	1-563-866-51	JACK, PIN 1P (VIDEO INPUT)			
J1802	1-563-866-51	JACK, PIN 1P (OUTPUT)			
		< FERRITE BEAD >			
L1803	1-500-288-21	FERRITE BEAD (CHIP)			
		< RESISTOR >			
R1805	1-211-990-91	RES, CHIP	75	0.5%	1/16W
R1806	1-211-990-91	RES, CHIP	75	0.5%	1/16W
R1807	1-211-990-91	RES, CHIP	75	0.5%	1/16W
R1808	1-216-864-91	SHORT	0		
R1809	1-216-864-91	SHORT	0		
R1810	1-216-864-91	SHORT	0		
R1811	1-216-864-91	SHORT	0		
R1812	1-216-821-91	RES, CHIP	1K	5%	1/16W
**********					
		MISCELLANEOUS			
		**********			
4	1-759-644-21	DRIVE, FLOPPY DISK (3.5inch)			
5	1-790-360-11	CABLE, FLAT (DKFD39)			
9	1-790-361-11	CABLE, FLAT (DKSW39)			
53	1-783-919-11	CABLE, FLAT (VIDK20)			
118	1-661-552-11	FP-700 FLEXIBLE BOARD			
119	1-543-936-11	CORE (FPC)			
220	1-783-926-11	CABLE, FLAT (POHE13)			
221	1-783-924-11	CABLE, FLAT (ADHE13)			
222	1-500-204-11	CORE, FERRITE			
258	1-790-362-11	CABLE, FLAT (VIVS39)			
⚠260	1-468-364-11	POWER BLOCK (POWER, SWITCHING)			
261	1-956-199-11	HARNESS (PS-33)			
⚠263	1-468-249-32	SWITCH BLOCK, POWER			
264	1-783-925-12	CABLE, FLAT (ADFE13)			
265	1-543-936-11	CORE (FPC)			
HEAD901	1-500-568-11	HEAD, THERMAL			
M901	1-763-018-21	FAN, DC (HEAD FAN)			
* M902	A-7092-967-A	MOTOR BLOCK ASSY, HEAD (HEAD UP/DOWN)			
* M903	A-7092-966-A	MOTOR BLOCK ASSY, REEL (RIBBON)			
M904	1-698-790-11	MOTOR, DC (STEPPING MOTOR) (PLATEN)			
M905	1-763-018-21	FAN, DC (POWER FAN)			
**********					
		**********			
		HARDWARE LIST			
		**********			
#2	7-685-651-71	SCREW +BVTP 3X20 TYPE2 IT-3			
#3	7-685-862-01	SCREW +BVTT 2.6X6 (S)			
#4	7-628-253-05	SCREW +PS 2X4			
#5	7-624-105-04	STOP RING 2.3, TYPE-E			
#6	7-685-852-01	SCREW +BVTT 2X5 (S)			
#7	7-685-103-11	SCREW +P 2X5 TYPE2 NON-SLIT			
#8	7-682-645-01	SCREW +PS 3X4			
#9	7-624-108-04	STOP RING 4.0, TYPE-E			
#10	7-628-253-95	SCREW +PS 2.6X4			
#11	7-621-759-65	+PSW, 2.6X8			

Ref. No.	Part No.	Description	Remark
#12	7-685-792-01	SCREW +PTT 2.6X6 (S)	
#13	7-685-536-19	SCREW +BTP 2.6X12 TYPE2 N-S	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-575-131-11	CORD, POWER (AEP)	
	1-696-863-11	CORD, CONNECTION	
⚠	1-751-673-11	CORD, AC POWER (UK)	
	3-865-280-01	MANUAL, INSTRUCTION (JAPANESE, ENGLISH, FRENCH)	
	3-865-280-11	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, SPANISH)	
	3-865-281-01	MANUAL, INSTRUCTION (JAPANESE, ENGLISH, FRENCH)	
	3-865-281-11	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, SPANISH)	
	4-640-087-01	PACK, CD-ROM	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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